

1996 DNHN User Requirements Survey Report

prepared by



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prepared for

Department of the Navy

Information Network Program Office

Table of Contents

EXECUTIVE SUMMARY.....	E-1
1. INTRODUCTION.....	1-1
1.1 Project Background.....	1-1
1.2 Project Scope.....	1-2
2. SURVEY METHODOLOGY.....	2-1
2.1 Survey Development and Distribution.....	2-1
2.2 Survey Content.....	2-3
2.3 Survey Data Base.....	2-4
3. SURVEY RESULTS AND ANALYSIS.....	3-1
3.1 User Demographics.....	3-2
3.2 User Requirements and Service Needs.....	3-9
3.2.1 Office Application Availability and Usefulness.....	3-9
3.2.2 Capabilities.....	3-17
3.2.3 Training Needs.....	3-29
3.2.4 User Support / Help Desk Satisfaction.....	3-35
3.2.5 Special Requirements / Future Capabilities.....	3-41
4. RECOMMENDATIONS.....	4-1



List of Figures

Figure 2-1: Survey Methodology.....	2-1
Figure 3-1: Method of Survey Response.....	3-1
Figure 3.1-1: Population of the DNHN Universe.....	3-3
Figure 3.1-2: Respondents by Organization.....	3-3
Figure 3.1-3: Organizational Experience.....	3-4
Figure 3.1-4: Distribution by Level (Civilian).....	3-4
Figure 3.1-5: Distribution by Level (Military).....	3-5
Figure 3.1-6: Self Assessed Computer Skill Level.....	3-5
Figure 3.1-7: LAN Connection Type.....	3-7
Figure 3.2.1-1: Application Availability.....	3-10
Figure 3.2.1-2: Importance of Applications.....	3-12
Figure 3.2.1-3: Importance of Word Processing.....	3-13
Figure 3.2.1-4: Importance of Groupware.....	3-14
Figure 3.2.1-5: Difficulty of Reading Files Received via Email.....	3-15
Figure 3.2.2-1: Email Capability.....	3-17
Figure 3.2.2-2: LAN Navigation Capability.....	3-20
Figure 3.2.2-3: LAN Capability CLAS v. UNCLAS.....	3-21
Figure 3.2.2-4: Internet Access.....	3-22
Figure 3.2.2-5: Reported Capability: Accessing the WWW.....	3-23
Figure 3.2.2-6: Reported Capability: Searching the Internet.....	3-24
Figure 3.2.2-7: Reported Capability: Downloading Data from Internet.....	3-24
Figure 3.2.2-8: Remote Dial-in.....	3-25
Figure 3.2.2-9: Remote Access.....	3-27
Figure 3.2.3-1: Training Requirements.....	3-30
Figure 3.2.3-2: Classroom Training.....	3-31
Figure 3.2.3-3: Impact of Classroom Training on Support Needs for LAN Navigation.....	3-32
Figure 3.2.3-4: Self Help Training.....	3-33
Figure 3.2.3-5: Self Help Training for Office Software.....	3-35
Figure 3.2.4-1: Processes Used for Problem Resolution.....	3-36
Figure 3.2.4-2: Help Desk Callback Procedure.....	3-37
Figure 3.2.4-3: Help Desk Support at User Deskside.....	3-38
Figure 3.2.4-4: Help Desk Telephone Support.....	3-40
Figure 3.2.4-5: Help Desk Deskside Support.....	3-41
Figure 3.2.5-1: Users' Special Requirements.....	3-43
Figure 3.2.5-2: Users' Who Do Not Have Certain Technologies, But Who Need Access.....	3-44



List of Tables

Table 3.1-1: Classified LAN Use Breakdown.....	3-7
Table 3.2.5-1: Technology Access v. User Need.....	3-45

Appendices

Appendix A: Survey Questionnaire
Appendix B: Comprehensive Survey Data
Appendix C: User Comments
Appendix D: Executive Interviews

E-1. Executive Summary

The Department of the Navy Information Network Program Office (DoN INPO) initiated a Department of the Navy Headquarters Network (DNHN) Information Technology Requirements Survey in September 1996. The purpose of the survey was to determine Navy end-user current and future IT requirements within the Pentagon and Washington Metropolitan area. The Navy contracted with Electronic Data Systems (EDS) to provide survey administration and analysis. The survey was jointly developed by the DoN INPO staff and the EDS survey team. The survey consisted of 10 demographic questions and 24 questions covering such areas as training needs, user requirements, and help desk responsiveness. Approximately 3200 surveys were distributed to the OPNAV and SECNAV users of DNHN. This report reflects the analysis of 769 surveys or about 24% of the user population. The survey results were captured and tabulated in an Access database, which allows further data manipulation, as well as future results to be compared with this baseline. The data base provides an interactive tool allowing INPO to make ongoing, productive use of the survey information. The data base can also be updated and expanded to accommodate future data collection efforts. The survey questionnaire can be found in Appendix A. A comprehensive breakdown of the survey data can be found in Appendix B.

The results of the data analysis include:

- Users are generally satisfied with the support provided by the DNHN Help Desk. However, help desk responsiveness falls short of user expectations, and Help Desk processes (e.g. issuing trouble tickets) are not consistently followed.
- User access to remote dial-in and Internet are limited. Most users did not indicate a significant need for remote access; however, the perceived need for Internet access is overwhelming.
- Software compatibility was not identified as a significant concern. Users indicated that they seldom had difficulty reading files sent to them over the network. However, problems were encountered by a number of users who received the survey document via Email, especially on the classified LAN.
- Users did not express a substantial demand for additional training opportunities. However, those who expressed an interest in training felt it could reduce their computer support needs.



As a part of the end-user survey, subjective comments were solicited and can be found in Appendix C. A number of interviews were also conducted with top level managers. These comments are summarized in Appendix D and include the following statements:

- The role of the Chief Information Officer should be to standardize architecture and set consistent policy.
- Interconnectivity is needed to facilitate communication especially between the classified and unclassified networks within the Pentagon.
- There is a need to ensure that the basic infrastructure and state of the market technology is in place before taking visionary steps or considering special applications such as knowledge based systems.

A series of recommendations resulting from the survey are included in Section 4 of this report. Some of the key recommendations include:

- Publish the survey results via the following media: the Internet (World Wide Web)--both the DoN INPO Home Page and SIPRNET, Email (provide a brief synopsis with instructions on where to obtain additional information), an article in the DoN INPO Newsletter and by making a hardcopy available if requested.
- Develop processes for key areas, such as Help Desk, refresh scheduling for classified and unclassified networks, training, and on-going requirements determination for the DoN changing environment.
- Proceed with further analysis of the data which should include entering the data for surveys which were received after the cut-off date. Upon further analysis, appropriate recommendations can be made, as well as identifying any additional follow-up projects.
- Develop a questionnaire for ongoing tracking of customer satisfaction consistent with the survey questions. Replies to the questionnaire could be tabulated monthly to track progress in DNHN customer satisfaction.
- Use the DNHN survey, adopting the lessons learned from this first iteration, as a model for any further surveys conducted. INPO can conduct more focused surveys for *Phase One* and continue to survey its *Phase Two* users to determine their specific requirements.

1. Introduction

1.1 Project Background

Historically, the Department of the Navy (DoN) has approached information management (IM) from a decentralized viewpoint, delegating authority to on-scene commanders. This has led to the development of redundant IM products—from infrastructure to information systems to databases. As the services transition toward joint operations, the DoN must focus on moving the DoN infrastructure toward interservice interoperability and conformance with established Department of Defense (DoD) policy.

In that regard, on October 26, 1995, the Secretary of the Navy began a consolidation of the DoN's information technology (IT) resources. The Secretary's goal was to create a Navy-wide information management infrastructure, from existing Navy networks, that provided commercial, standards-based, interoperable tools.

The need for a centralized IT office to oversee connectivity and compatibility issues became apparent when officials within SECNAV could not easily communicate electronically with officials within OPNAV, yet both organizations were located within the Pentagon.

As a result, on January 7, 1996, the DoN Information Network Program Office (INPO) was created. Its purpose is to serve as a source of leadership, direction, and technical expertise for the consolidation of IT resources.

INPO intends to accomplish its goals using a three-phased program:

- *Phase One* will create the Department of the Navy Headquarters Network (DNHN), integrating the numerous existing Navy Pentagon LANs into two networks: one classified and one unclassified. DNHN will be a microcosm of the Secretary's vision, providing commercial, standards-based, interoperable computing tools to every Navy Pentagon office.
- *Phase Two* will extend this seamless operational capability to all major Navy networked sites within 65 miles of the Pentagon.
- *Phase Three*, conducted in conjunction with the Defense Information System Agency (DISA), will establish the DoN's largest (nearly 300,000 users) network across the United States, and potentially, due to user requirements, world-wide.



At the conclusion of the three-phased program, everyone in the Navy will communicate with the same set of interface standards using a state-of-the-art, robust infrastructure that will reduce costs and increase the Navy's ability to effectively use IM and IT to improve warfighting capability.

In order to successfully achieve its goals, INPO realized that it needed a better understanding of its customers and their IT requirements. Thus, INPO wanted to understand and rely on the opinions and attitudes of its customers at all levels. INPO believed that surveys (including paper and electronic-based questionnaires, personal interviews, and telephone polls) play a crucial role in gathering these opinions and attitudes. Additionally, as a corollary to the survey, we conducted interviews with high level executives in order to understand their vision of IT for the Pentagon, as well as the means by which they measure INPO's performance.

To that end, INPO contracted with Electronic Data Systems (EDS) to develop a DNHN User Requirements Survey. The survey questionnaire is included in Appendix A.

1.2 Project Scope

In September 1996, INPO requested EDS' support in developing an end-user survey of its information technology services.

INPO wanted the survey to target all current and future users affected by *Phase One* of its Navy-wide integration efforts. This represents a universe of over 3,200 OPNAV and SECNAV employees in the Pentagon and outlying offices within the Washington, DC metropolitan area.

The purpose of the survey was to help INPO to:

- Identify current and future user requirements
- Identify user training needs
- Understand user expectations and current level of satisfaction
- Determine resource needs and allocation
- Develop metrics for ongoing analysis and measurement.



This report represents an analysis of the survey data collected from the project period September 17, 1996 through December 6, 1996.

In addition to the Executive Summary and this introductory section, this report contains the following:

- **Section 2: Survey Methodology** This section outlines EDS' approach to the survey development and distribution, as well as providing an overview of the survey content.
- **Section 3: Survey Results and Analysis** This section presents the initial analysis of our data collection efforts for each of the following categories:
 - Office Applications Availability and Usefulness
 - Capabilities (Email, LAN Navigation, Internet Access, Remote Access)
 - Training Needs
 - User Support / Help Desk Satisfaction
 - Special Requirements / Future Capabilities.
- **Section 4: Recommendations** This section includes recommendations for further analysis and consideration of additional follow-on tasks.
- **Appendix A: Survey Questionnaire** Provides a hard copy version of the survey instrument that formed the basis for this report.
- **Appendix B: Comprehensive Survey Data** Provides data for each question included in the survey.
- **Appendix C: User Comments** Provides verbatim comments from Section C of the survey.
- **Appendix D: Executive Interviews** Summarizes insights provided by a number of executives within the DoN. The executives shared common IT visions for the future.

2. Survey Methodology

Figure 2-1 depicts the 14-step approach (in chronological order) the EDS survey team used to develop the DNHN User Requirements Survey:

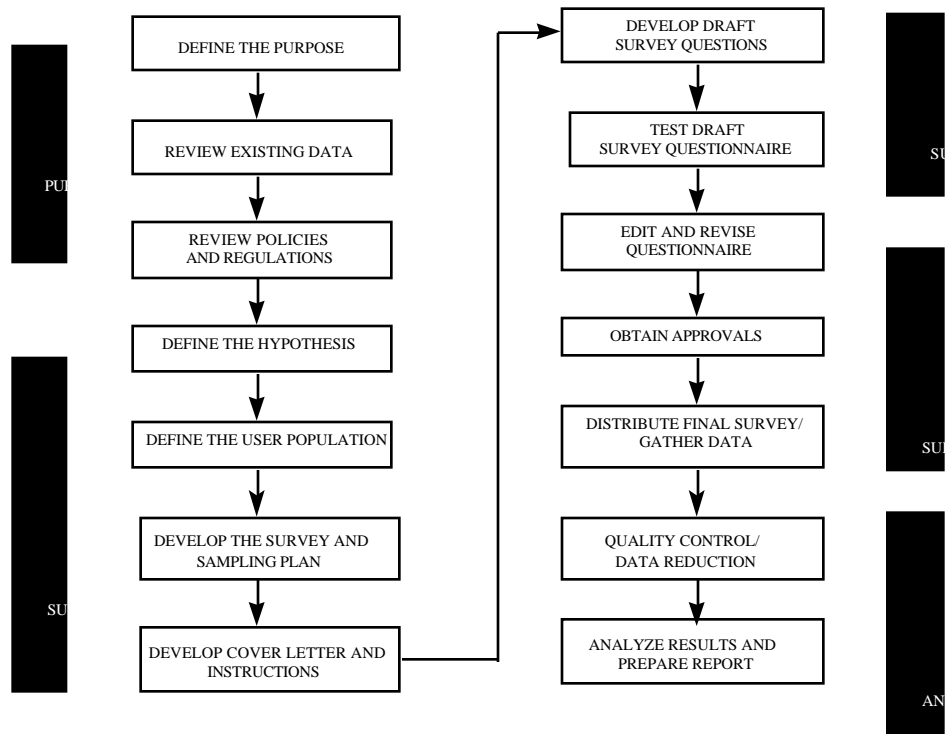


Figure 2-1: Survey Methodology

The sections that follow highlight two of the steps mentioned above – Survey Development and Survey Distribution.

2.1 Survey Development and Distribution

Seeking to prevent possible user concerns about the confidentiality of their responses, INPO asked EDS to assume responsibility for planning, designing, and conducting the 1996 DNHN User Requirements Survey.



Survey Development

EDS initially developed a draft survey focused on topics of importance identified by INPO. These topics included such issues as:

- User satisfaction with DNHN help desks
- Identification of new or enhanced technology requirements
- User skill levels
- Accessibility of services such as Internet and remote access.

Input was solicited from the INPO team, requirements officers in OPNAV, SECNAV, Headquarters, Marine Corps (HQMC) and various representative DNHN users to ensure the survey included issues of importance to INPO as well as their customers. The instrument was designed so the questionnaire covered the right issues and would be well received by users at all levels.

EDS' survey planning and development steps included:

- A literature review to identify issues on previous user surveys and to determine both successful and unsuccessful techniques in administering employee surveys and analyzing the results.
- Planning meetings with the INPO team, OPNAV, SECNAV and HQMC Requirements Officers (although the Marine Corps did not participate in the initial survey).
- Pilot test groups with representatives from all user levels from each organization.

Survey Distribution

On November 13, 1996, the survey was distributed to over 3, 200 current and potential DNHN users. To ensure that the survey was made available to all users, INPO used the following three channels of delivery, with electronic distribution employed on both the classified and unclassified networks:



- Internet (automated World Wide Web version via INPO Home Page)
- Email (with automated survey entry form or “Autosurvey”)
- Hardcopy.

2.2 Survey Content

The survey questionnaire is included in Appendix A. The survey contains 34 questions and is divided into three sections: (1) User Demographics, (2) User Requirements and Service Needs, and (3) User Comments.

Section One: User Demographics (Questions 1 - 10)

Items in this section provide INPO with a profile of its current and potential users. This section contains background information on the user including the user name and Email address, organization, office location, tenure, position or level, and primary job function. This section also contains a profile of the user’s computer environment such as the user’s primary computer and computer skill level, and identifies the LAN(s) (Classified or Unclassified) they use.

Section Two: User Requirements and Service Needs (Questions 11 - 34)

This section represents the essence of the survey. Items in this section provide INPO with a measurement of user’s requirements and capabilities in areas such as office applications, training, special/future technologies, Email, Internet and remote access as well as user satisfaction with the DNHN Help Desk support services.

Section Two is further divided into the following topics:

- Office Applications and Training
- Software Compatibility / Conversion
- Special Requirements / Future Capabilities
- Email



- LAN Navigation
- Public Internet Access
- Remote Access
- Desktop User Support.

Section Three: User Comments

INPO wanted to give users an opportunity to offer candid remarks and thus asked the EDS team to create a mechanism for users to remain anonymous. Therefore, the EDS team created this section as a separate and distinct part of the survey.

2.3 Survey Data Base

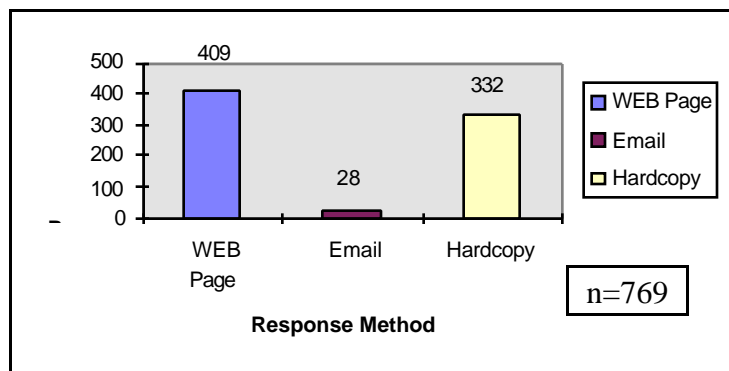
The data received from respondents was entered into an *Access* data base for analysis. The data base was designed to provide for a wide range of analysis, offering the capability to test a variety of hypotheses. The information presented in this report represents only a small portion of the possible analytical opportunities offered by the data base. The data base provides an interactive tool allowing INPO to make ongoing, productive use of the survey information. The data base can also be updated and expanded to accommodate future data collection efforts.

3. Survey Results and Analysis

This section provides the results of the survey and analysis of the implications of the data reported for selected parts of the survey. A complete reporting of the survey data is provided in Appendix B of this report. The section is structured to follow the outline of the survey instrument. We report first on the demographic data provided in the survey. This information gives the reader a sense for the respondents included in the survey results. The second part of the chapter focuses on the “User Requirements and Service Needs” section of the survey. This section has been reordered slightly from the survey and includes information on:

- Office Application Availability and Usefulness
- Capabilities
- Training Needs
- User Support/Help Desk Satisfaction
- Special Requirements/Future Capabilities.

We have supplemented this section with comments provided by respondents. Although such comments represent only a small fraction of the sample, they often help clarify issues suggested by the data. In addition, we have included comments, where appropriate, provided through the Executive Interviews conducted during the course of this survey. (Comments received during the survey and the executive interviews are provided in Appendices C and D, respectively.)



In an attempt to provide a substantial amount of data in as clear a form as possible, this report relies heavily on graphical representations of the data. In Figure 3-1, we illustrate the format used to report data through graphics. The number in the box in the lower right hand corner represents the number of respondents to the question portrayed in the graph.

Figure 3-1: Method of Survey Response

Although the total number of respondents was 769, in most cases the data presented in the graphic represents a subset of the sample. In some of the graphics, the total number of respondents varies (e.g., when reporting summary data). In such cases, we will not display the number of respondents for the data presented. The information portrayed on the “x” and “y” axes changes from one graphic to the next. Every attempt has been made to provide a clear label on the axes to aid understanding. In the example, the “y” axis represents the number of respondents and the “x” axis provides the means by which the respondent filled out the survey.



3.1 User Demographics

We asked ten demographics questions to understand the type of people who responded to the survey. In this section, we provide a summary of the demographic data focusing on the following categories:

- Number of respondents by organization (OPNAV v. SECNAV)
- Length of time with their current organization
- Position within the organization
- Skill level (self-assessment)
- LAN connectivity.

These categories proved useful in developing a profile of respondents to the questionnaire. The demographic data also provide the opportunity to segment the data by major groupings allowing the analysis of data for subsets of the data. For example, is it possible to identify training needs for different skill levels? Do the members of OPNAV have different requirements or technology needs than their counterparts in SECNAV? The demographic data provide the means to segment the data base into a wide variety of subsets for comparative purposes.

We attempted to reach all levels of individuals with this survey in order to understand the specific, job related requirements, as well as the standard information technology requirements which most people need met in order to accomplish their jobs. The entire breakdown of demographics information can be found in Appendix B: Comprehensive Survey Data.

Figure 3.1-1 represents the current or future DNHN users that formed the universe of potential respondents to this survey. SECNAV accounts for 1,391 of the DNHN universe and OPNAV adds another 1,821 users.

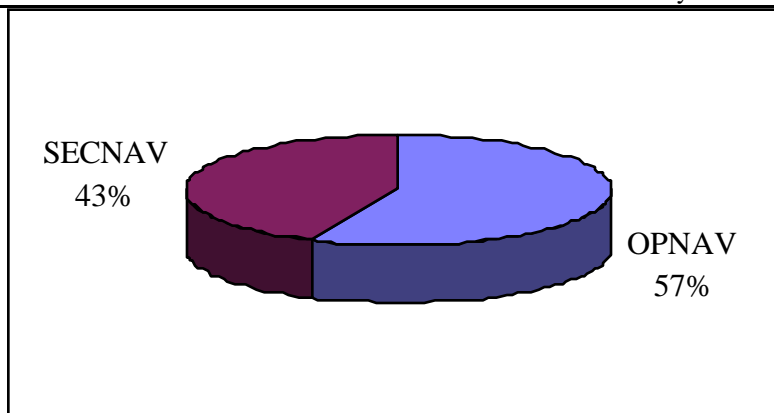


Figure 3.1-1: Population of the DNHN Universe

Figure 3.1-2 shows the breakdown of responses received from the two major organizations supported by DNHN. Of the 769 surveys included in this analysis, 42% came from OPNAV and 58% were received from SECNAV. The exhibit does not include the 2 responses received from members of HQMC and the 5 respondents who did not indicate their organizational affiliation. The 323 surveys received from OPNAV represented about 18% of the OPNAV population; SECNAV's 439 responses made up about 32% of their population. The surveys received represent 24% of the total universe (OPNAV + SECNAV).

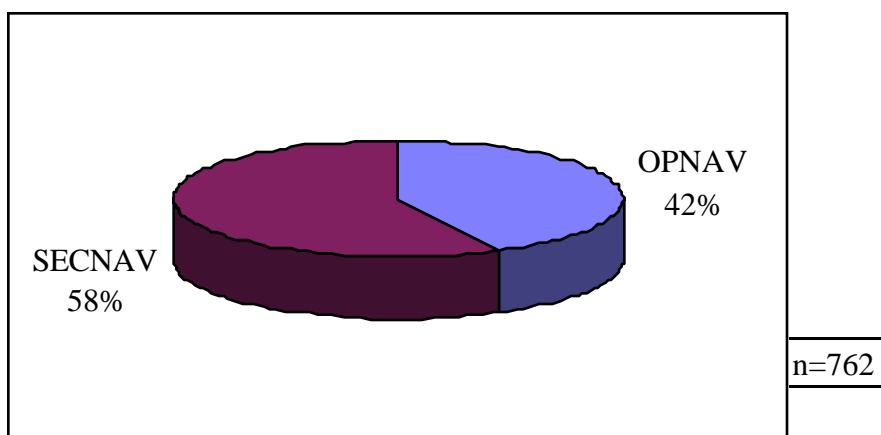


Figure 3.1-2: Respondents by Organization

The experience levels in Figure 3.1-3 reflect the time of service of survey respondents with their current organization. (181 people did not answer this question.)

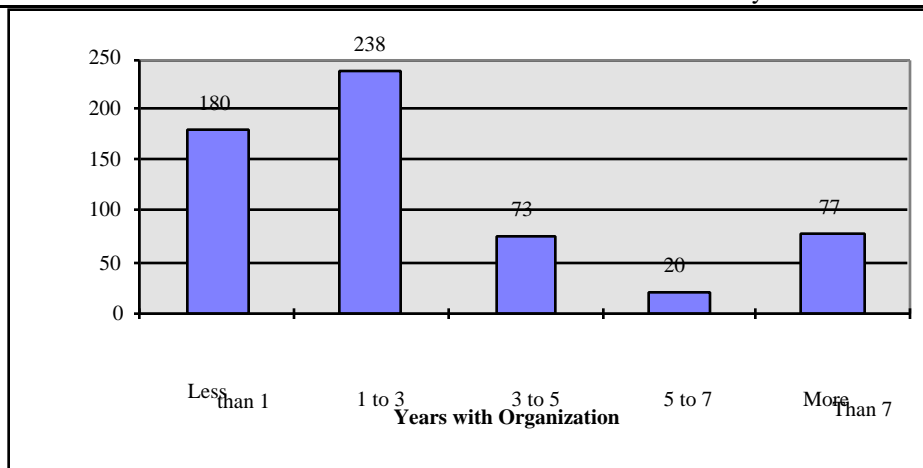


Figure 3.1-3: Organizational Experience

As the exhibit shows, 31% of the sample who responded to this question, indicated that they have been in their current position for less than one year. When this group is combined with the 238 respondents with 1-3 years of service in their current job, 71% of respondents are accounted for. This appears to be consistent with the fast changing DoN environment.

Survey returns indicating the level or position of the respondents are reflected in the two following charts. This data set does not reflect surveys received from 13 respondents who did not specify their current position. The Civilian percentage represented in Figure 3.1-4 includes those who responded GM, GS, SES and Intern.

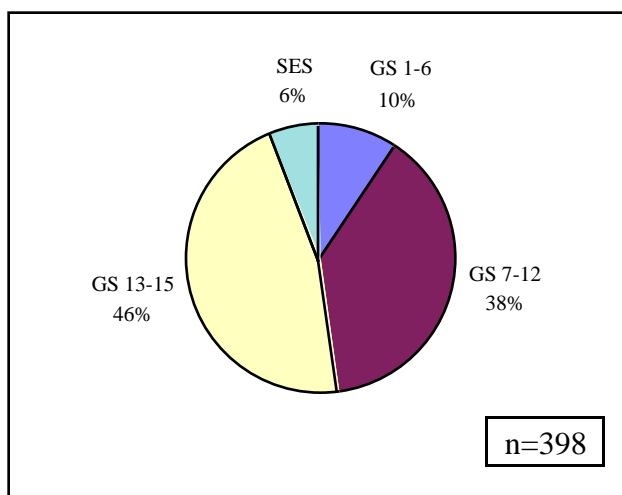


Figure 3.1-4: Distribution by Level (Civilian)



The military contribution to the sample is provided in Figure 3.1-5 and shows both the officer and the enlisted respondents. In terms of the total survey sample, the military personnel accounted for 45% of the total versus the civilian response which represented 55% of those who responded to the survey.

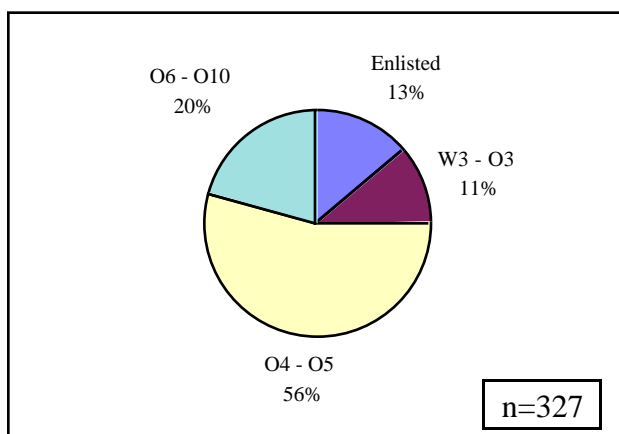


Figure 3.1-5: Distribution by Level (Military)

Figure 3.1-6 indicates the skill level of those responding to the survey. The self assessed level of computer skill shown in the graphic below does not reflect 361 survey respondents who did not provide an answer to this question.

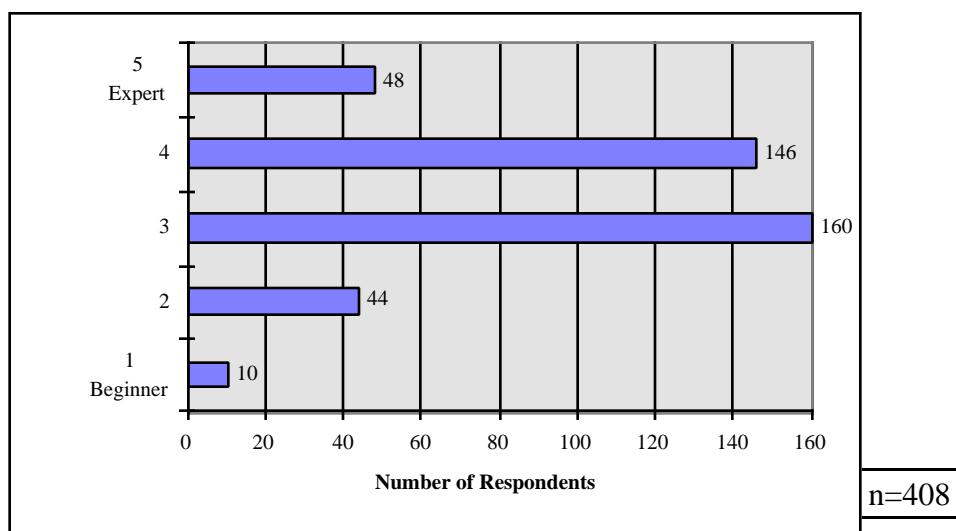


Figure 3.1-6: Self Assessed Computer Skill Level



Users were asked to rate themselves as to their overall computer knowledge, on a scale ranging from beginner (1) to expert (5). We found that most people who rated themselves as either a 4 or a 5 were well versed in many aspects of computer knowledge (i.e., they were familiar with the “office suite,” LAN navigation and had the ability to conduct various Internet tasks).



Figure 3.1-7 indicates the LAN to which the respondent is connected. Most of those reporting indicated they are connected to the Unclassified LAN (47%), with a significant number having access to both the Classified and Unclassified LAN (40%).

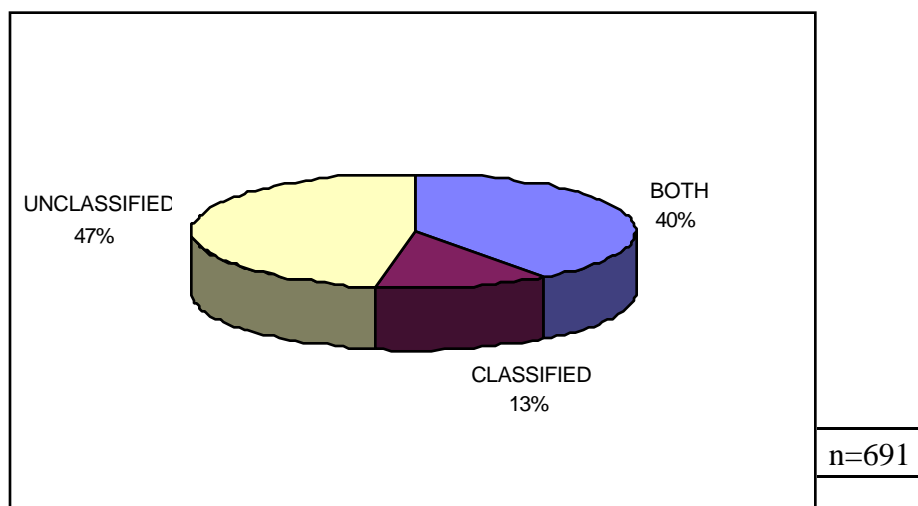


Figure 3.1-7: LAN Connection Type

LAN connectivity has implications for such things as ability to easily share Email files. In fact, a number of the survey participants on the CLAS LAN had a difficult time attempting to print out the survey document which was included in an Email file.

A related question asked the volume of actual classified work conducted while on the CLAS LAN. Table 3.1-1 shows that for the most part significant portions of the work conducted on the CLAS LAN does not need to be treated as classified. 120 (32%) of those who responded to this question indicated that less than 10% of their work on the LAN was classified.

Table 3.1-1: Classified LAN Use Breakdown



Responses in	Percentage
Range	Range
120	0 to 9
28	10 to 19
32	20 to 29
55	30 to 39
52	40 to 49
21	50 to 59
13	60 to 69
16	70 to 79
12	80 to 89
29	90 to 100



3.2 User Requirements and Service Needs

This section of the survey consisted of 24 questions grouped into five areas:

1. Application Availability and Usefulness
2. Capabilities (includes LAN, Email, Internet, Remote Access)
3. Training Needs
4. User Support / Help Desk Satisfaction
5. Special Requirements / Future Capabilities.

We targeted these areas in an effort to have a comprehensive survey, which would not only assess how IT requirements are currently met and how well, but also to determine users' expectations for the future. In this report, the survey results have been grouped into the five classifications listed. A sample of the data is provided for selected items within each group. For a comprehensive look at the data for each question, see Appendix B.

3.2.1 Office Application Availability and Usefulness

The purpose of this section is to assess the degree to which current DNHN users have access to the basic office suite of applications, as well as determine the usefulness of these applications in performing their jobs. This information was gathered for nine applications ranging from Word Processing to Group Facilitation software. The survey question was asked in two parts. First, did the respondent currently have the listed application. Second, how important was the software in performing the respondents job. This second part of the question required the user to rate the software on a five point scale ranging from not important to very important.

In addition to assessing availability and importance of office applications, this section of the survey data provided the opportunity to determine additional information from the sample. By drawing upon the demographic data, it is possible to determine the answer to such questions as:

- Is the lack of specific software limited to a select office or location or is it spread throughout the DNHN?
- Do those who lack a particular application feel it is important in performing their job?
- Is the unavailability of software a function of the LAN being utilized?



Figure 3.2.1-1 (page 3-8) indicates the extent to which each of the nine applications is currently available to DNHN users. Not surprisingly, word processing was the most readily available software, although a significant number (150 of the 769 respondents) indicated they did not have access to word processing. Groupware was the least available, with only 65 respondents indicating they had access to this software. The survey did not attempt to identify the version, type or compatibility of the applications currently available.

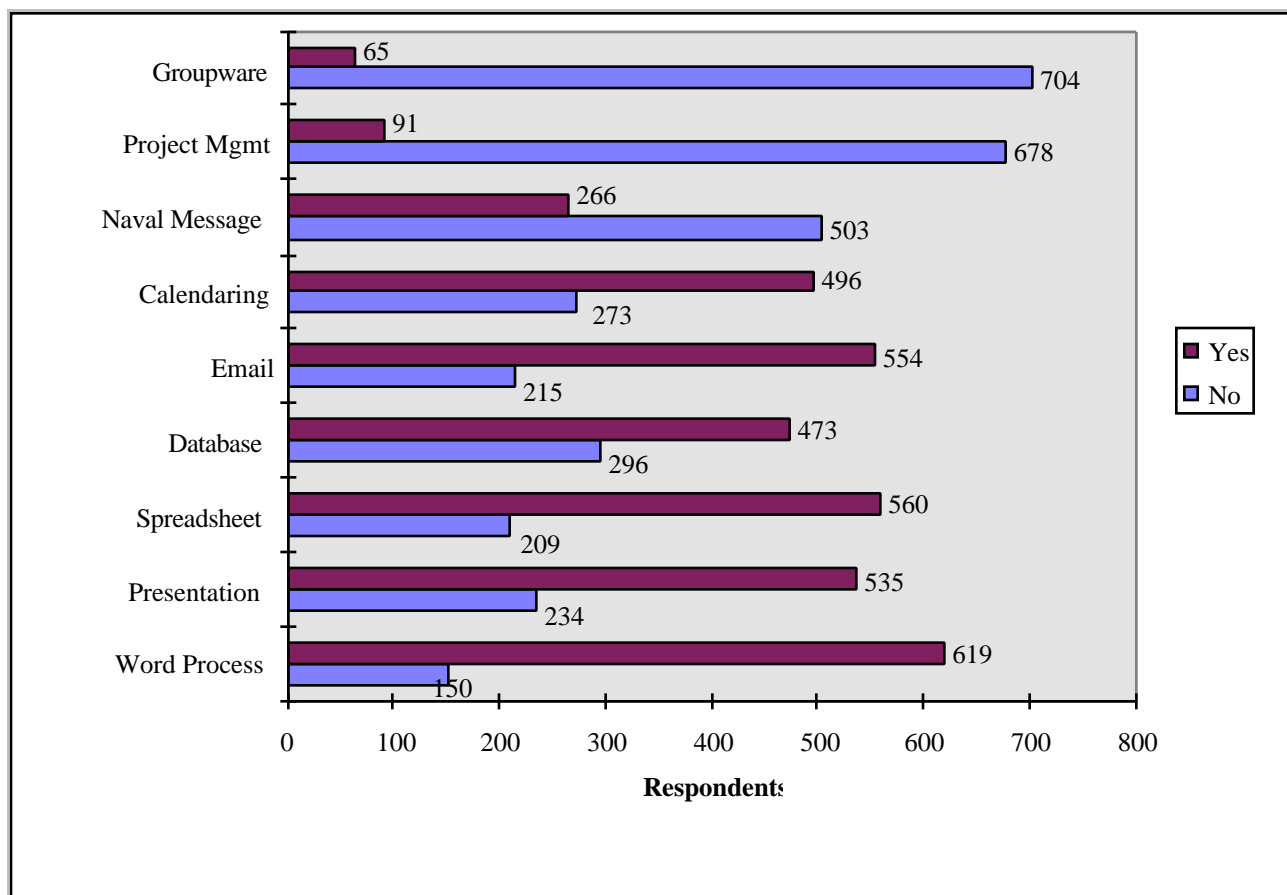
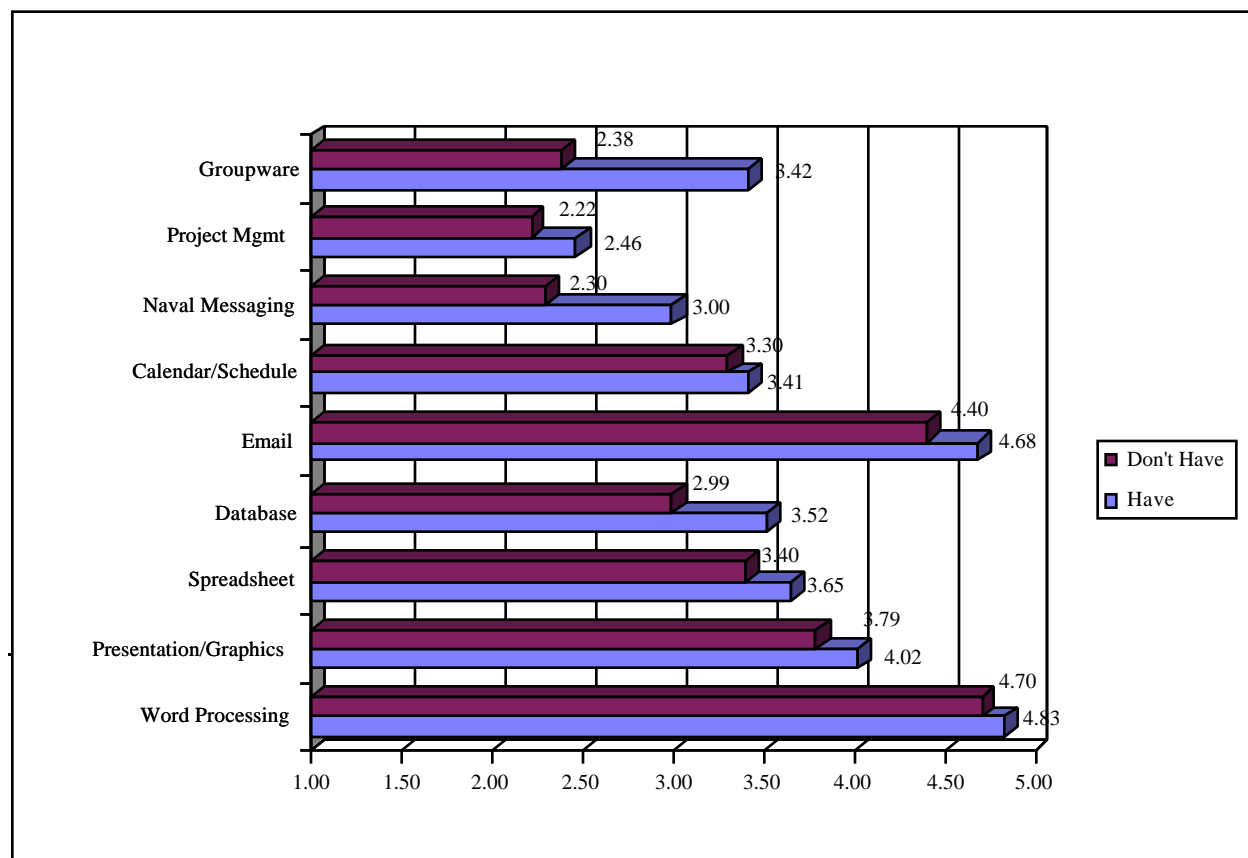


Figure 3.2.1-1: Application Availability

Additional analysis of application availability was conducted to determine if demographic attributes offered insight into this area. This analysis indicated that the lack of access to software was generally random and not a function of location, organization, LAN type (Classified v. Unclassified), or user attributes such as skill level or time in the organization. However, there were some anomalies that should be looked at more closely. For example, Email

availability was analyzed using the organization codes provided in the demographic section. If the distribution of Email access was perfectly random across the sample by organization then approximately 2 out of every 10 respondents in each organization code should indicate they did not have access to Email. This would be consistent with the overall sample where 153 out of 697 indicated they did not have Email (or about 22% do not have Email and 78% do). Fifteen of the organizations represented in the sample reported lower levels of Email capability than the overall sample (i.e., had fewer than 78% with Email). However, of these fifteen organizations, six were very close to the average and four had very few data points (less than 5 respondents). SECNAV, CHINFO, N095 and N1 reported Email availability levels between 56-67%.

In Figure 3.2.1-2 we show the level of importance determined by respondents for each of the office applications. Survey respondents were asked to indicate the importance of office application software on a five point scale ranging from 1 equal to “Not Important” to 5 equal to “Very Important” in performing their job. Those without access to the software in question were asked to estimate its importance. The display below shows the average importance ranking as reported by users who currently have access to the software, as well as for those who do not. As the figure indicates, Email and Word Processing are considered the most important office applications by both those with and those without current access to the software. Groupware, on the other hand, has a marked contrast between the importance as rated by those with the software as opposed to those without access. However, Groupware is viewed by several of the executives we interviewed as an important application which will help lead to a “paperless”





environment, as well as help to speed decision making processes, such as proposal efforts, which have to be reviewed by many organizations.

Figure 3.2.1-2: Importance of Applications

Not Important

Very Important



In the two figures which follow, we further breakdown importance of applications by showing more detail for Word Processing and Groupware software. Figure 3.2.1-3 shows the importance rating for Word Processing on the 1-5 scale. Obviously, Word Processing is considered a very important part of the office suite. The vast majority of those reporting indicated that Word Processing was “Very Important” in performing their job. This was consistent for both those who currently have the software and those who don’t.

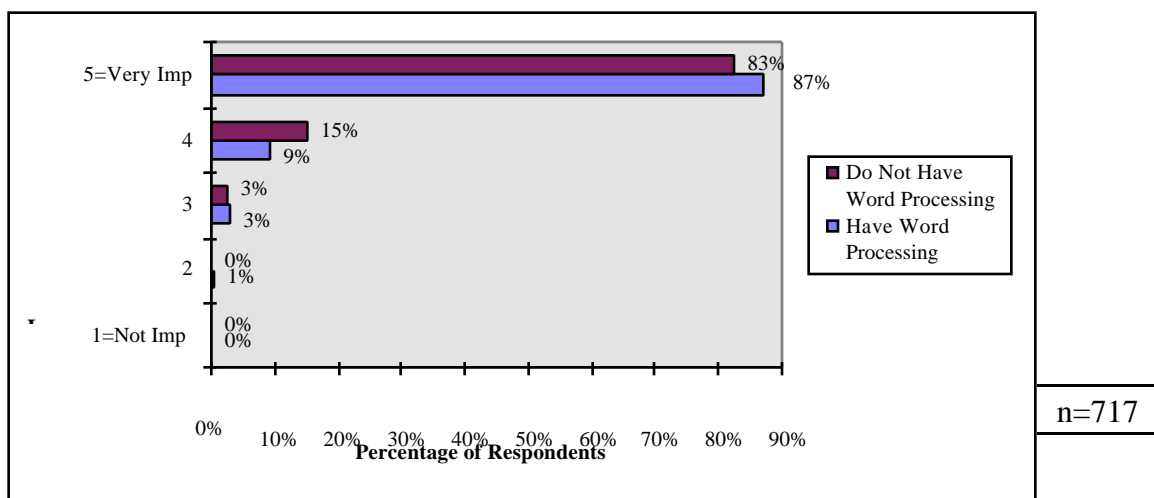


Figure 3.2.1-3: Importance of Word Processing

In contrast, the relatively small number of users who currently have access to groupware felt that it was an important part of their office application suite. Those who do not have groupware gave it a significantly lower rating on the importance scale. 36% of those without groupware indicated it was “Not Important.” The same percentage (36%) of users with groupware considered it to be “Very Important” in performing their job.

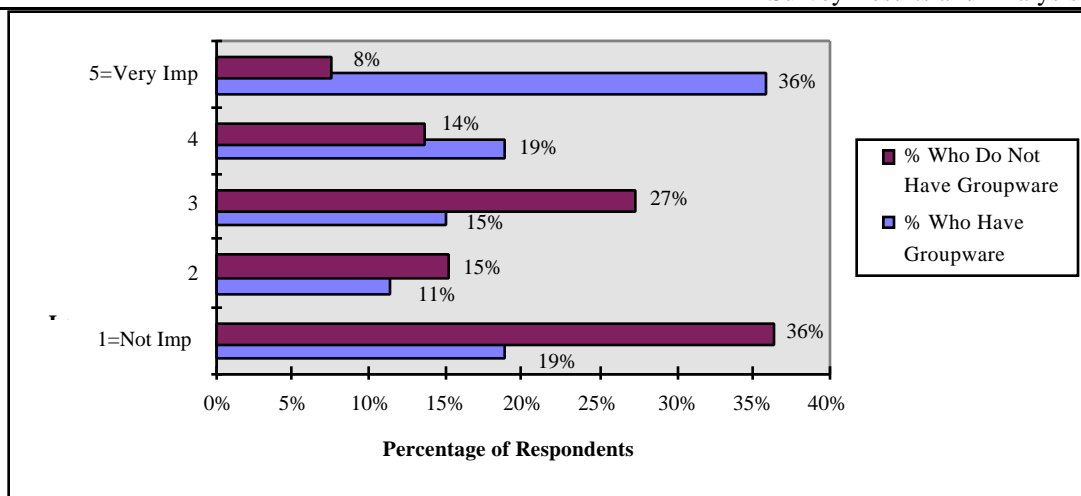


Figure 3.2.1-4: Importance of Groupware

The next graphic in this section, Figure 3.2.1-5, deals with software compatibility issues. In this case, respondents were asked to indicate the rate at which they experience difficulty reading files sent to them via Email. A 5 point scale was used ranging from 1 equaling never experiencing difficulty to 5 representing frequent problems. The most frequently occurring compatibility problems were Graphics and Word Processing files sent via Email. However, even in these areas the rate at which problems occurred was reported to be fairly low. The average response for Graphics was 2.53 (3.0 was labeled as “Seldom” on the scale).

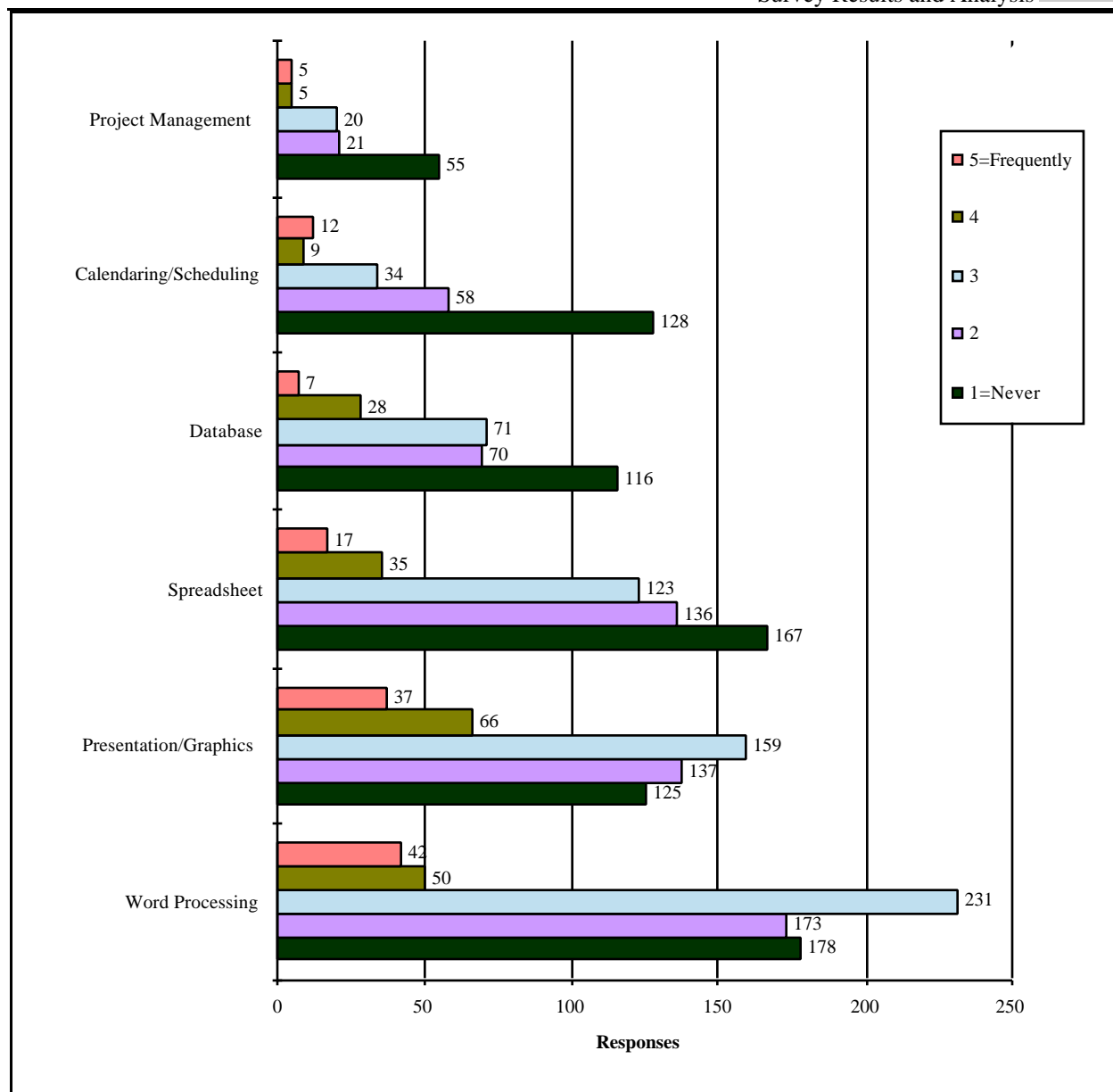


Figure 3.2.1-5: Difficulty of Reading Files Received via Email

Although the users surveyed did not report significant difficulty in reading files sent via Email, it should be noted that the survey version (a highly formatted WP document) distributed electronically was poorly converted and largely unreadable by a significant number of users (mostly on the classified network). The electronic version of the survey was sent out to the



widest possible DNHN audience. It is possible that the data reported by the respondents represents experience within a confined area where the users have very similar hardware and software.

While great strides have been made in connectivity and the goal of interoperability that drives the DNHN effort is being realized, it should also be recognized that communication tools like Email will be increasingly important in the future. Greater demands will be placed on these tools to provide quick, easy and accurate data transmission. Relatively minor glitches can result in major problems. Even isolated glitches can result in lost time, reduced productivity and added costs. As we begin to rely even more heavily on tools such as Email, such costs can begin to add up to very significant levels if quality improvements do not keep pace with usage.



3.2.2 Capabilities

With the questions concerning users' capabilities, we were trying to understand the specific tasks which the users currently perform well. In the capabilities section, we addressed the areas of Email, LAN Navigation, Internet Access, and Remote Access.

- **Email**

The first question in this section asked the respondent to rate their capability in conducting a variety of Email tasks such as creating personal address books or attaching files to Email messages. A 5 point scale was used ranging from "Not Capable" (1) to "Very Capable" (5). Figure 3.2.2-1 represents the average capability reported by survey respondents. As the figure indicates, dial in access to Email received the lowest average score. 459 of the 716 who answered this question indicated they did not have the capability to dial in to Email. Attaching files to Email shifted toward the opposite end of the scale with 351 of 720 feeling "Very Capable" in conducting this task. Of the six Email tasks listed, the most frequently occurring value for locating remote addresses and dialing in to Email was "Not Capable." For each of the remaining four tasks, the most frequently reported capability value was 5, or "Very Capable."

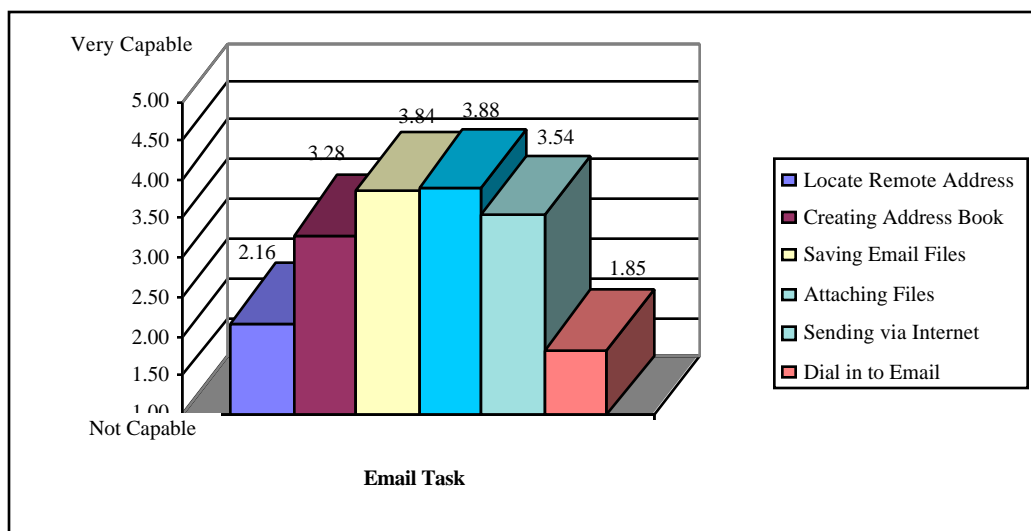


Figure 3.2.2-1: Email Capability

One user made the following comment regarding Email within DNHN: "Additionally, e-mail has been a problem. Having the address is not enough, no one can tell you which mail server/group/what-ever to go through to get my e-mail through the firewall. I have had too many



e-mails kicked back with ABSOLUTELY NO CLEAR REASON as to why they could not go out.” Another user claimed that “Classified - Unclassified email address too hard. Unless address is within LAN, then email is way too hard.” This claim was echoed during our executive interviews, when we learned that Internet Email (i.e. Flag Email) is “painful” to use.



- **LAN Navigation**

This question addressed LAN Navigation capabilities in a manner similar to the Email section of the survey. The same 5 point scale was used and respondents were asked to rate their capability in three areas: locating printers, logging on to remote servers, and locating/accessing shared files.

The data for LAN Navigation are reported in Figure 3.2.2-2. In this case, the figure reports the actual number of respondents that rated their capabilities for each of the LAN categories. For example, 322 respondents indicated that they were “Not Capable” of logging on to remote servers, 80 said they were “Very Capable.” Capability levels for accessing shared files and locating printers were more widely dispersed. Of the approximately 700 that rated their capabilities, 150 said they were “Not Capable” of accessing shared files, while 184 indicated they were “Very Capable.”

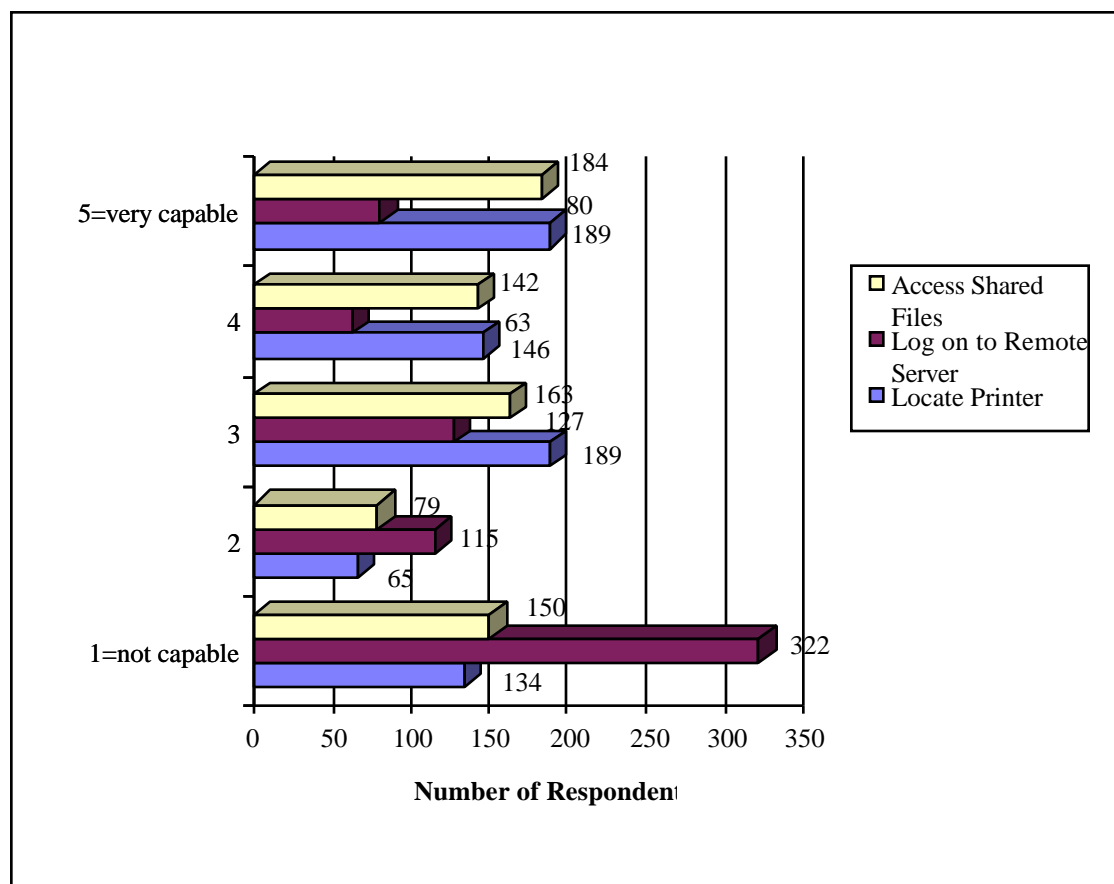




Figure 3.2.2-2: LAN Navigation Capability



To better understand the reasons behind reported LAN Navigation capabilities, a number of tests were run on the data to identify the factors that influence the capability levels. Figure 3.2.2-3 reports the LAN Navigation data for those respondents using the Classified LAN versus those on the Unclassified LAN. As the figure indicates, there does not appear to be a connection between the LAN type and the users' navigation capability.

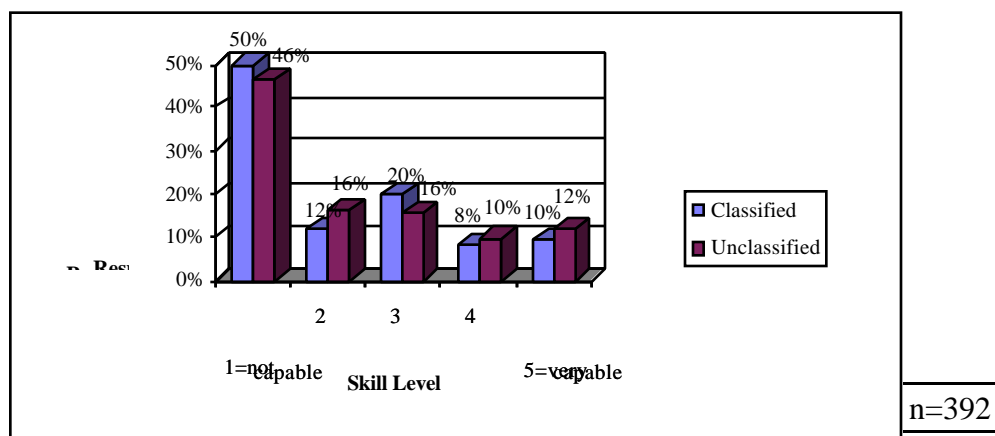


Figure 3.2.2-3: LAN Capability CLAS v. UNCLAS

LAN Navigation does appear to be significantly influenced by the skill level of the respondent. For example, those who reported their computer skill level at the highest level (5) were much more likely to rate themselves at the high end of the capability scale for accessing shared files. Since this question was, in part, a measure of specific computer skills it should track fairly closely with overall skill levels.

It should also be noted that some of the respondents did not have access to a LAN at the time the survey was conducted and this fact had an impact on responses to this question. The Audit Services group was in the process of having their LAN installed at the time of the survey. Of the 80 responses from this group, 39 indicated they were "Not Capable" of accessing shared files. This represents fully 26% of all respondents who rated themselves "Not Capable," yet the audit services group represented only 10% of the total sample. In other words, this group skewed the data toward the lower end of the capability scale because they lacked the technology to access shared files.

Several of the executives mentioned that the classified network is behind the unclassified network in technological capability; they wanted the two networks to mirror each other (if not in applications, at least in look and feel), for ease of users switching between the two networks.



- **Internet Access**

The next set of questions tracked the capabilities of DNHN users in the area of Internet access and use. The first question in this area probed the need for Internet access to perform current job requirements. As the pie chart in Figure 3.2.2-4 indicates, 90% of those who answered the question believed some form of Internet access would help them perform their job. (Only 49 of the total sample of 769 did not answer this question.)

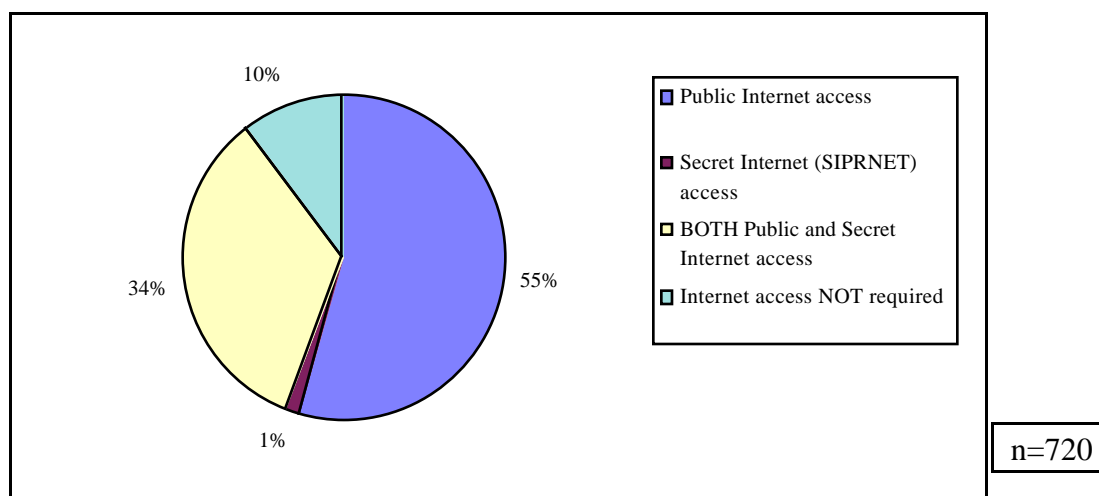


Figure 3.2.2-4: Internet Access

Focusing only on those who believe they need Internet access, 60% wanted public Internet access and 38% wanted both public and secret (SIPRNET) Internet access. 2% indicated they needed only SIPRNET access. Additionally, one user said “The greatest need in our organization is...Internet access.” Another said “As an auditor internet access could be a [sic] valuable to researching various areas.”

The next three figures provide the capability reported by respondents in performing three Internet tasks: Accessing the World Wide Web, Searching Internet and Downloading Data. For each category, the average was at least 3, indicating that users felt they were “Somewhat Capable” or better in their ability to perform Internet tasks. (The scale ran from 1, Not Capable to 3, Somewhat Capable to 5, Very Capable.)



The mode or most frequently occurring answer for accessing the World Wide Web (WWW) was “Very Capable”; 230 of the 727 respondents, as seen in Figure 3.2.2-5, rated their capability at this level (5 on the scale).

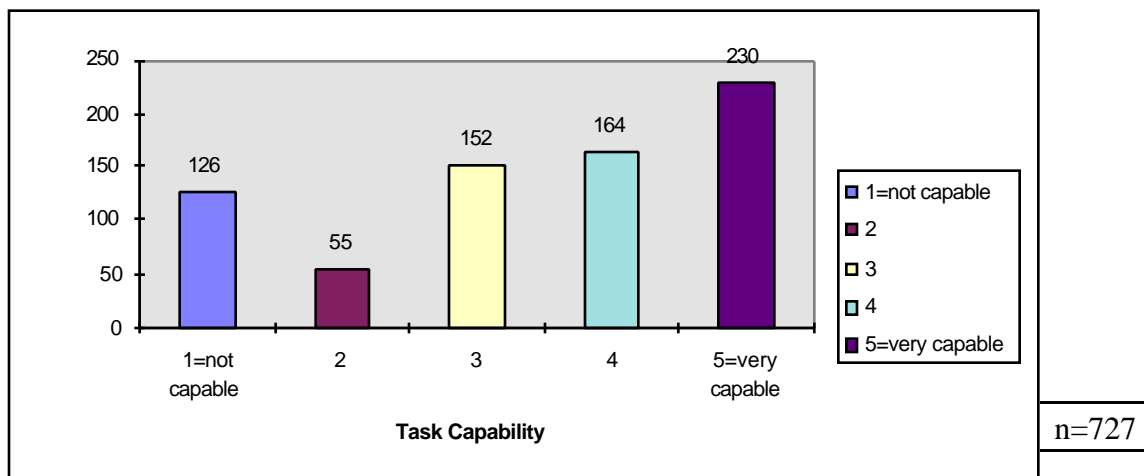


Figure 3.2.2-5: Reported Capability: Accessing the WWW

Although Searching Internet and Downloading Data had successively lower scores, “Very Capable” was also the most frequently reported capability level for both of these skills. Figure 3.2.2-6 shows that the most frequently reported capability level for searching the net was 5; in this case, 197 of the respondents said they were “Very Capable” in performing this task.

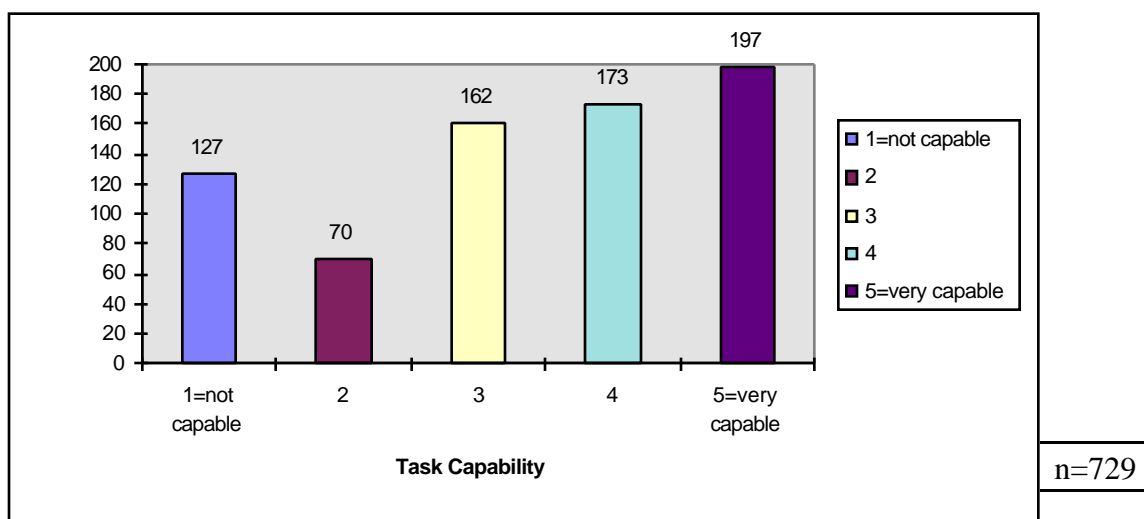




Figure 3.2.2-6: Reported Capability: Searching the Internet

Figure 3.2.2-7 shows that the respondents reported capability for downloading from the Internet mirrors the previous two charts. The only difference is a slight decline in the number of those indicating they were “Very Capable” (186 rated their capability at the 5 level).

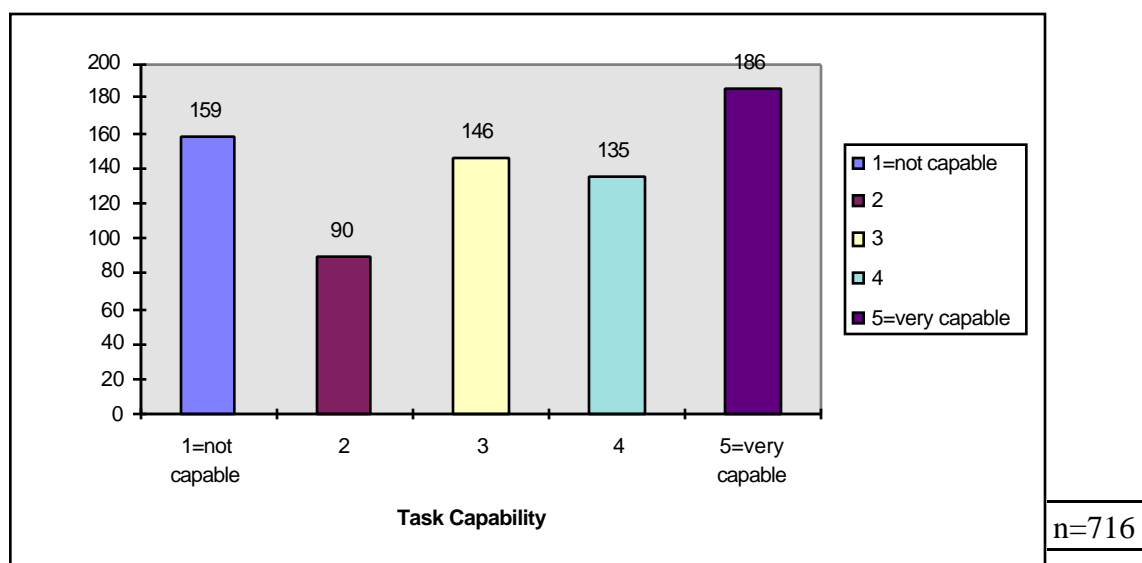


Figure 3.2.2-7: Reported Capability: Downloading Data from Internet

One anomaly represented on each of the figures is interesting. In each case, although the majority of those reporting rated their skills at the high end of the scale, a substantial number of respondents said they were not capable of performing these tasks. This is most pronounced in the downloading data task. For this task, the second most frequent response was “Not Capable.” Once again, Audit Services has a significant affect on the numbers reported in this area. For example, the number of people indicating that they are “Not Capable” of accessing the web drops from 126 to 93, a 26% decrease when the Audit Services group is dropped from the sample. The data suggest that the word “capability” from the survey question is being interpreted in two ways. One segment of the sample is rating their personal skills in conducting the task, while another part of the group is reporting on limits to their capability placed by the lack of necessary technology.



- **Remote Access**

The following charts highlight the area of remote access. We asked several questions regarding remote access and have highlighted two of the aspects, the first is the users' ability to dial-in remotely, expressed as a percentage. It is easy to see from the data displayed in Figure 3.2.2-8 that the vast majority of INPO customers do not know how to log in remotely. This is not surprising because, like Internet access, the current environment does not provide substantial capabilities for off site access. However, demand for this capability is also expected to grow, as evidenced by this comment from a DNHN user: "My office mates and I do a lot of traveling and much of our work is conducted with government labs and contractors spread all over the US...Remote access (either from home or while on travel) is needed to help us remain in touch."

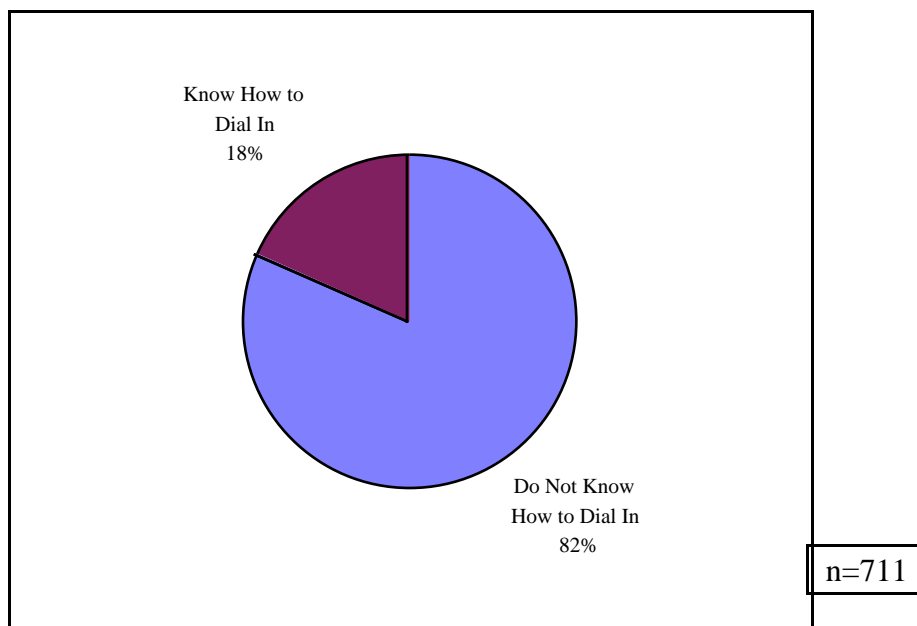


Figure 3.2.2-8: Remote Dial-in





Figure 3.2.2-9 displays data associated with the frequency of remote access usage. Two questions were asked to determine this information. The first question asked those who currently have remote dial in capability to estimate their weekly usage. The second question asked those who do not have remote dial in capability to estimate their weekly usage if they did have remote capability.

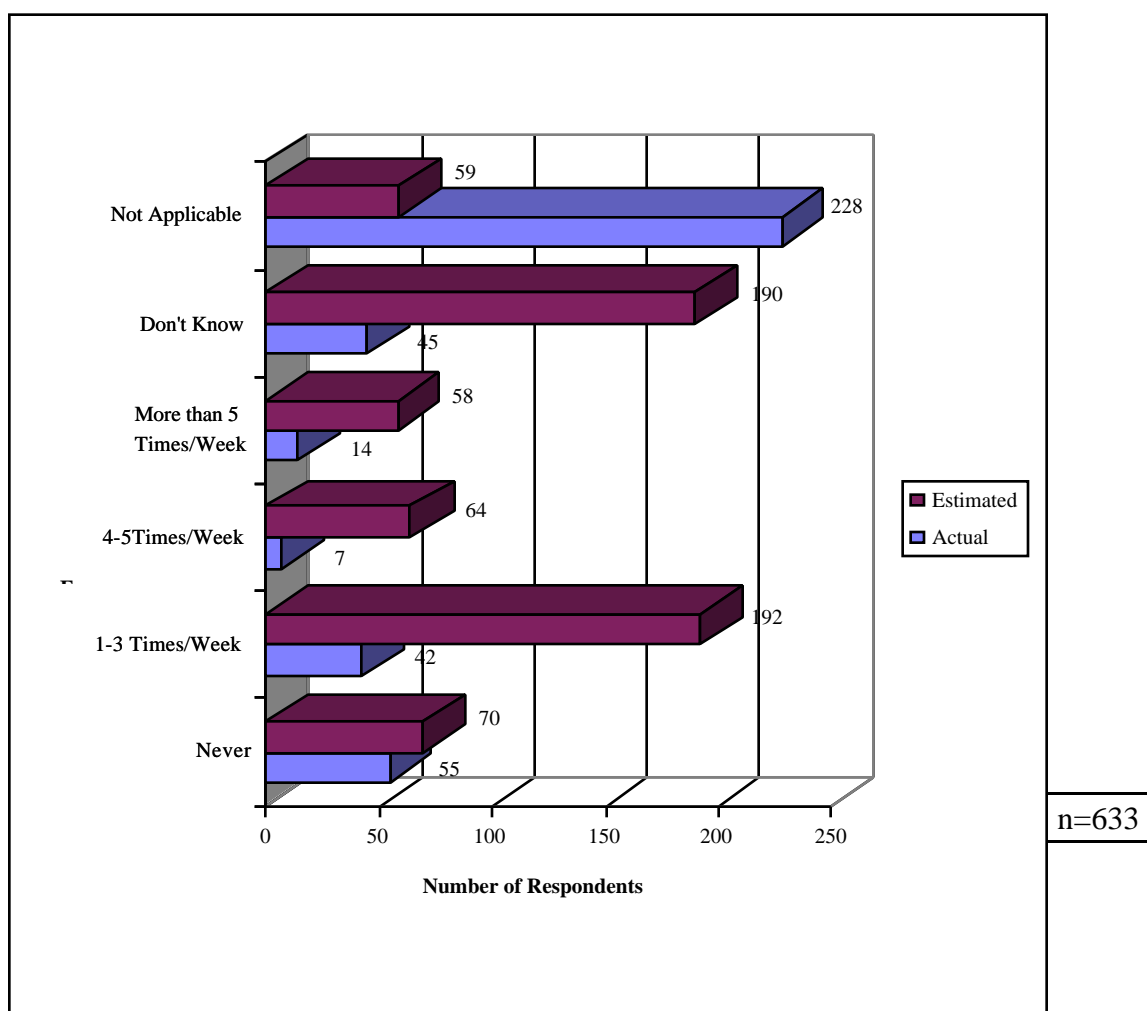


Figure 3.2.2-9: Remote Access

The largest number of users without remote access estimated that they would use dial-in capability 1-3 times a week. Approximately 50% estimated they would use this capability 1-3



times/week. Only 63 of the respondents reported actual usage data. Of these, 67% reported their actual use to be 1-3 times/week.



3.2.3 Training Needs

Two sets of questions were asked in the area of training. The first set simply asked users where they felt they needed training to do their job better. This was a “yes or no” question and it covered ten software areas. Figure 3.2.3-1 provides a compilation of respondents training needs from this question. Training in the areas of Presentation/Graphics and Database software were the two most frequently cited by the survey respondents.

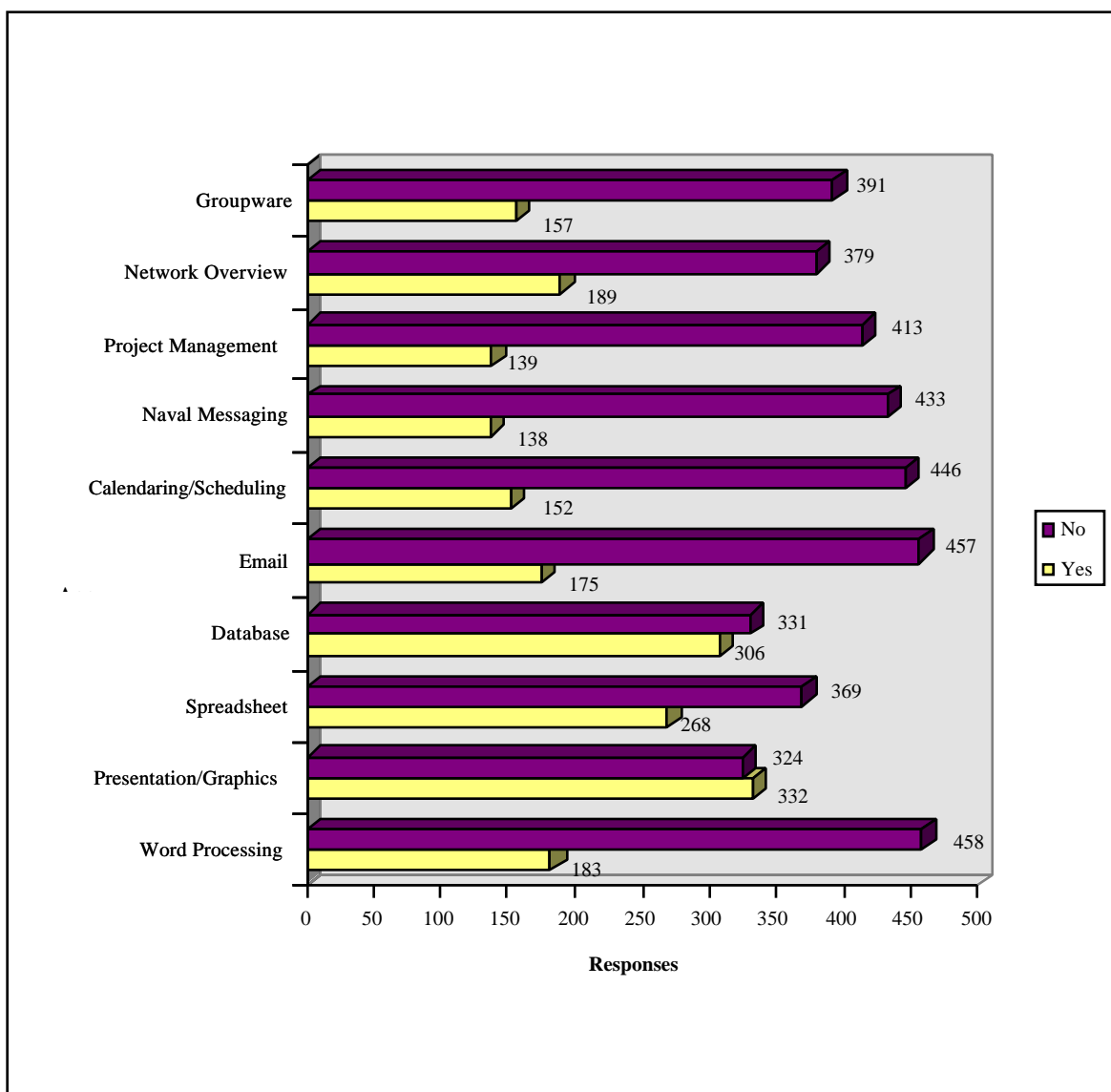




Figure 3.2.3-1: Training Requirements

The second set of questions assessed the value of training in reducing the need for computer support. The questions asked if self-help or classroom training in six specific areas would reduce the respondents need for computer support. A five point scale was used ranging from “Very Little to Significantly.” Figure 3.2.3-2 provides the data for the classroom training question. The figure presents the average score for each of the areas tested. As the figure shows, the average scores were generally low, indicating that the respondents did not feel that training would reduce their support needs. In addition, the most frequent response for each of these areas was 1 or training would reduce support needs “Very Little.”

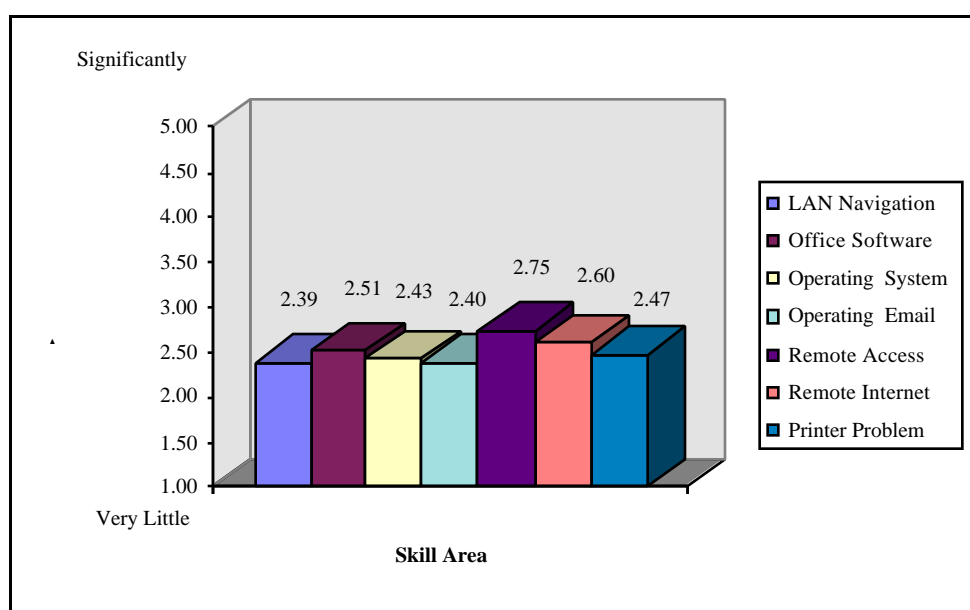


Figure 3.2.3-2: Classroom Training

Although the previous graphic suggests that training would have little impact on user support needs, the interpretation of the data changes when you break out one segment of the sample population. In Figure 3.2.3-3 (page 3-23), we look at the data for LAN training from the perspective of two different subsets of the sample. Subset 1 provides the responses to this question for those who had previously indicated that they needed LAN training (Question 12). This subset is compared to the remainder of the respondents to question 33 (subset 2).



As the figure indicates, of those who believe they need training, a much higher percentage believe it would reduce their computer support needs. 42% of this group answered 4 or 5 to this question, while only 21% of the remainder of the sample believed training would reduce their support needs to the same extent. The average score for the group that needs training is 3.06, the average for the rest of the sample is 2.16. A difference of approximately 42% in the two averages.

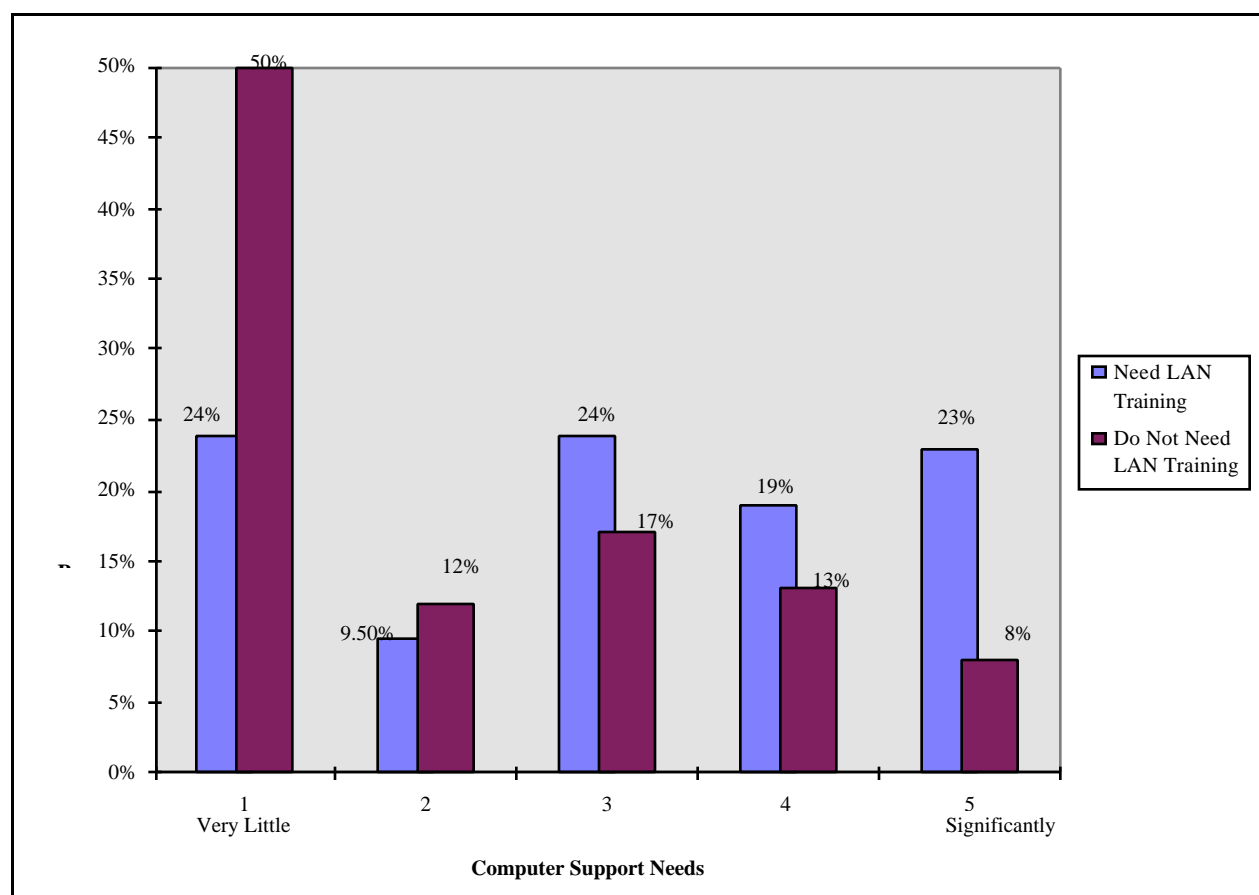


Figure 3.2.3-3: Impact of Classroom Training on Support Needs for LAN Navigation



Figure 3.2.3-4 depicts how helpful users thought that self help materials would be in reducing computer support needs in a variety of hardware/software areas. The responses for this question are very similar to the results presented on classroom training. A five point scale was used and respondents were asked to estimate how useful self-help material (manuals, on-line tutorials, etc.) would be in reducing their computer support needs. The average responses received for this question are presented in the figure below.

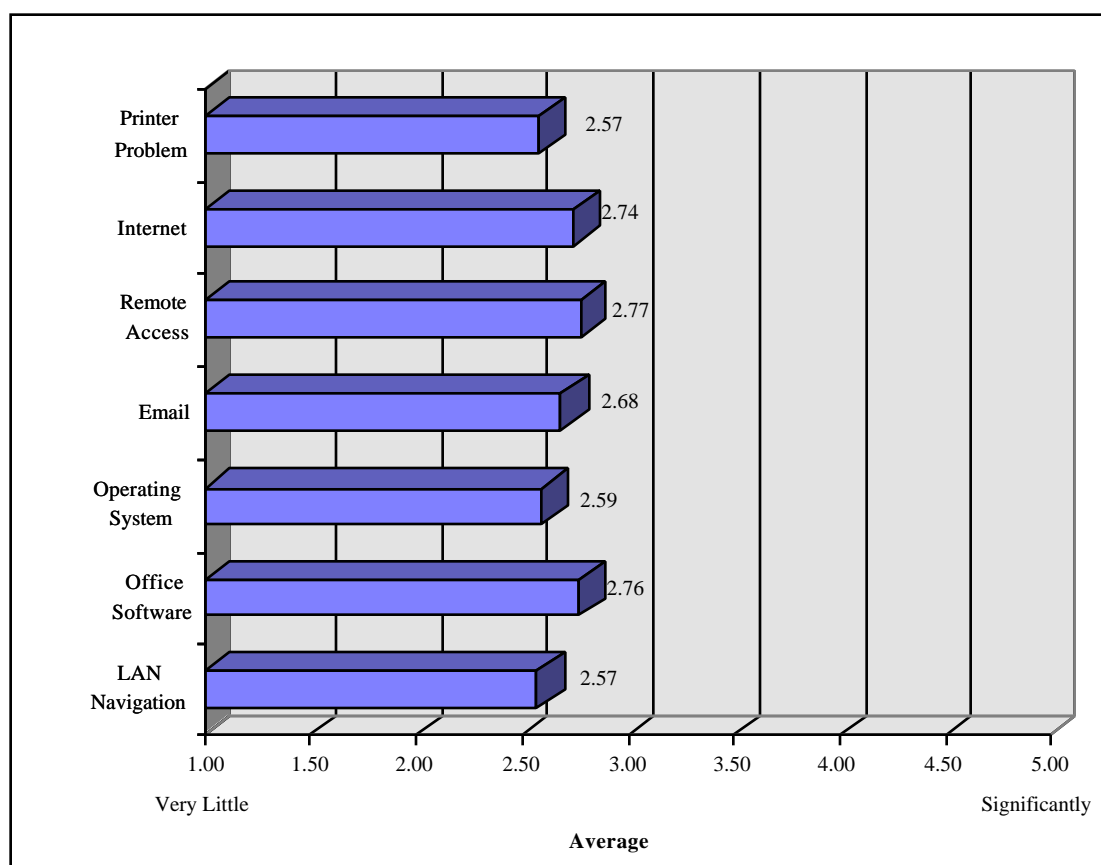


Figure 3.2.3-4: Self Help Training

Again, users indicated that, in general, self-help materials would not make a significant impact on their need for computer support. However, the same pattern exists here as was shown for the question on classroom training. Those who believe they need training were much more likely to indicate that self-help materials would reduce their requirement for computer support. Several users commented on training, in particular “Tutorials-self help- sounds great” regarding having self-help training materials made available; while another user’s generic comment on both self-



help and classroom training ran as follows: “More training classes for office applications. Reference books and user manuals for software especially independently produced publications.”

Very Little

Significantly



Figure 3.2.3-5 provides detail for one of the categories (Operating Software) summarized on the previous chart. As the figure shows, the most frequent response to this question was “very little.” In other words, 196 of the respondents felt that Office Software manuals and tutorials would have very little impact on their computer support needs.

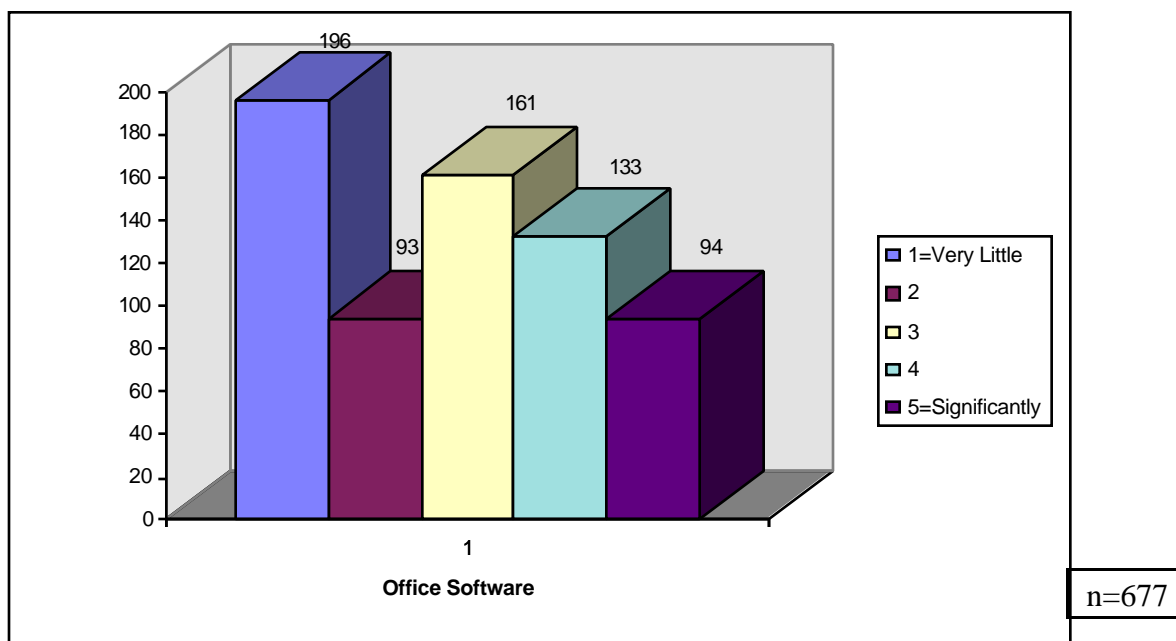


Figure 3.2.3-5: Self Help Training for Office Software

3.2.4 User Support / Help Desk Satisfaction

In this section, a series of questions were asked related to desktop user support. The questions were aimed at ascertaining how users address their computer problems, their level of satisfaction with help desk support, and their opinion and experience with help desk response time.

Figure 3.2.4-1 (page 3-26) provides data for the type of approach the survey respondents use to resolve computer related problems. The survey provided three defined approaches to choose from: an informal process (coworker, self-help, etc.), a semi-formal process through an officially designated point of contact, and the formal process through the DNHN help desk.



As the graphic indicates, most users rely on informal mechanisms to resolve problems. SECNAV makes more use of the point of contact or semi-formal approach than OPNAV. Respondents in OPNAV were much more likely to directly contact the help desk for support needs. 13% of SECNAV users reported that the formal process was their chief means of resolving problems, while 33% of OPNAV respondents indicated that the formal process was the means they used most often to resolve computer problems.

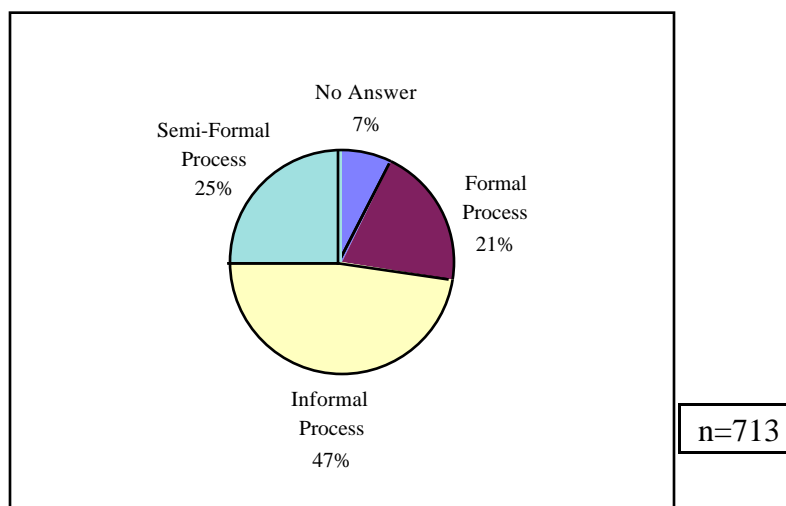


Figure 3.2.4-1: Processes Used for Problem Resolution

One user suggested an interesting idea for obtaining help with problems, as the following comment details: “It would be nice to have a computer room manned during the day where an individual could go discuss problems encountered.”

The second set of questions in this section of the survey allowed the comparison of DNHN help desk actual response time with user preferences. Figure 3.2.4-2 (page 3-27) illustrates the user preference for callback response compared with actual response. Callback is the time it takes the help desk to make contact with a user after they leave a message at the help desk requesting support. As the chart shows, actual callback response falls short of user expectations. 282 of the 450 respondents (about 63%) who provided their expectation felt they should receive a callback in one hour or less. Approximately 36% indicated that their actual callback experience was one hour or less. In other words, about one out of every four help desk customers would not have their expectations met.



It should be noted that this question measures user preferences and their reported experience with help desk response. It does not provide insight into the resource capabilities of the help desk. The actual experience reported by the users may represent the limit of the help desk capabilities when volume of calls and available resources are considered. This could only be determined by studying the help desk process directly.

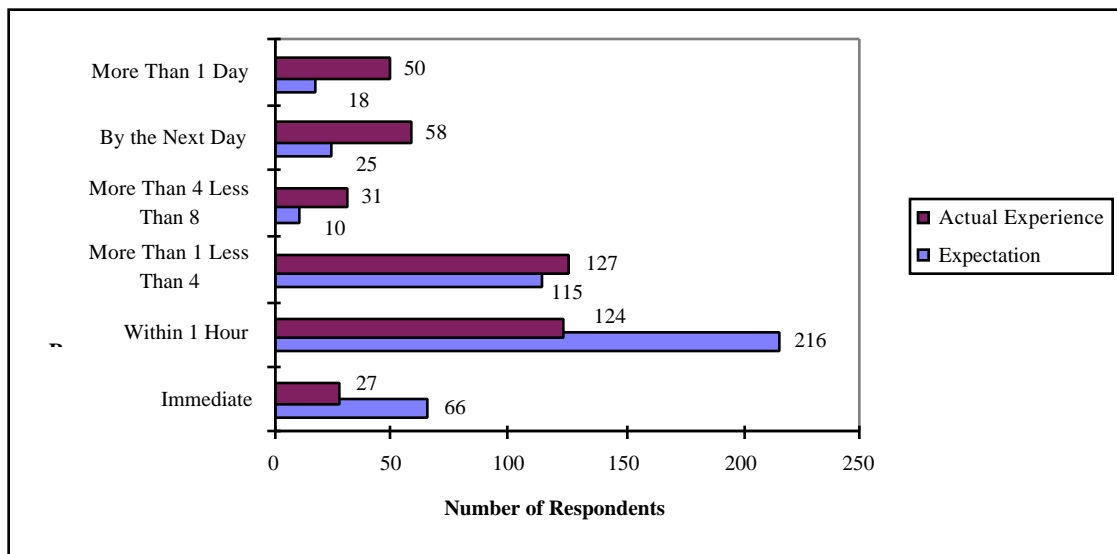


Figure 3.2.4-2: Help Desk Callback Procedure

An attempt was made to determine if users reported a better response time depending on the process they used (semi-formal v. formal). This question was not asked directly by the survey, so the information would have to be inferred from the analysis of various cuts of the data. The first cut tried was OPNAV v. SECNAV. This assumes that SECNAV makes greater use of the point of contact approach than does OPNAV. The actual experience reported by the OPNAV respondents was faster than that reported by SECNAV. However, the differences are not pronounced enough to draw conclusions. Similarly, comparing those primarily using the formal process v. those reporting they used the semi-formal process, the data support the formal process as the more responsive. Again, the difference was not dramatic.



Next, we wanted to compare actual on-site support response time as reported by users. This is a measure of the time from the initial support request until work actually began at the requesters site. As Figure 3.2.4-3 shows, most users would like work to begin within 4 hours from the time they first called to report a problem. 73% of help desk users wanted work to begin within 4 hours of the initial request, while 55% indicated that their actual experience fell within this time frame.

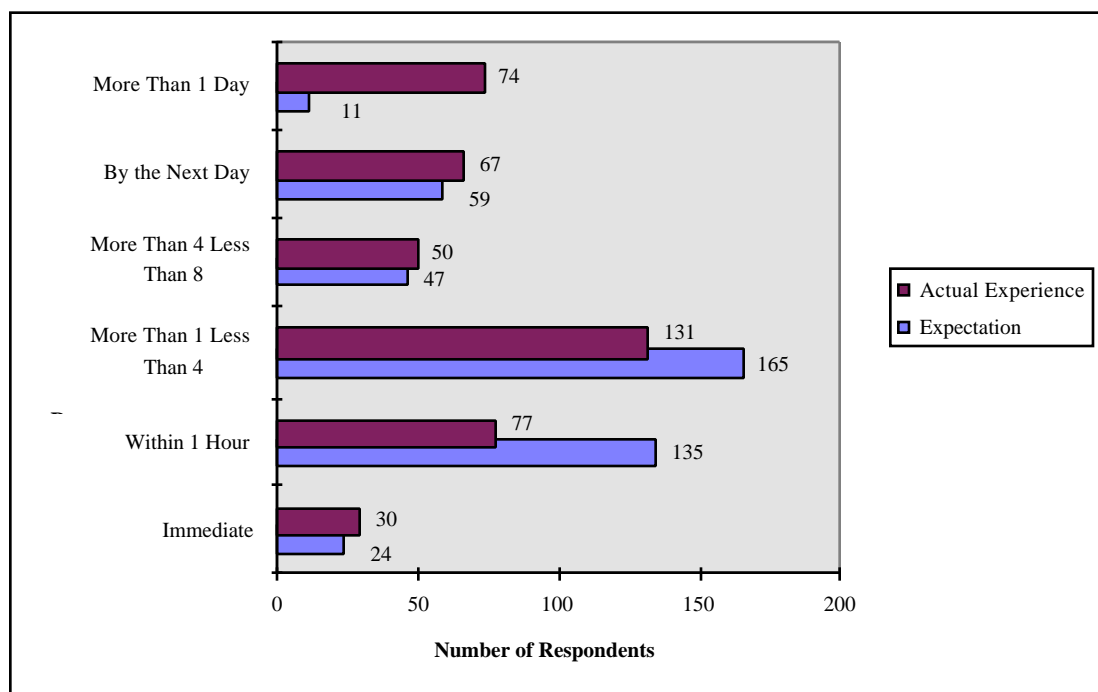


Figure 3.2.4-3: Help Desk Support at User Desktop

User comments about Help Desk support were mixed, for example “Faster response time on trouble calls” was counterbalanced by “All problems that I have had were fixed in a reasonable amount of time.” Opinions in the area of Help Desk support vary by individual, one user claimed “In general, I have been pleased with the support I have received from the trouble desk” while another user detailed his on-going Help Desk saga concluding with the comment “This response was awful!”

Most of the executives we talked to said that their IT needs were being met, in part because of their position within the organization. One executive suggested that Help Desk personnel leave a business card after they have visited or send an Email detailing instructions, if necessary.





After identifying the kind of response times which users expect from their help desk, we tried to capture how they rated the help desk staff in two areas: providing telephone support and providing on-site support. A five point scale was used ranging from “Strongly Disagree” to “Strongly Agree.”

Figure 3.2.4-4 shows an average of users’ responses concerning their experience with the help desk staff in the following areas: answering in a courteous manner, being knowledgeable, communicating a time frame for response, and providing a trouble ticket number. Obviously, there is a steady drop in the respondents’ ranking of telephone support. When asked whether the help desk telephone staff were courteous the most frequent response was 5 for “Strongly Agree.” For the “Knowledgeable” question, 4 was the most frequent response. However, for both the procedural issues (communicated timeframe and provided trouble ticket number), the most frequent response was “Strongly Disagree.” One user commented “There will always be a need for good over-the-phone or in-person troubleshooter...”

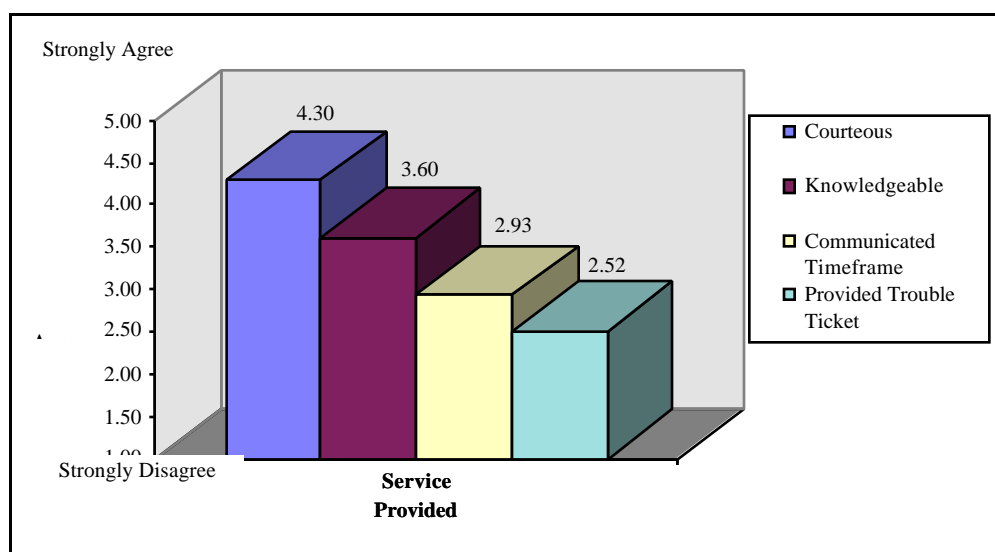


Figure 3.2.4-4: Help Desk Telephone Support



Figure 3.2.4-5 is again an average of users' responses concerning onsite staff performance in the following areas: responding courteously, being knowledgeable, communicating a time frame for response, meeting the time frame communicated, being prepared for handling the problem, and resolving the problem in a single visit. The averages for this question exhibited a similar trend as in the preceding question, but were generally more positive. In every case but one (communicated timeframe), the most frequent response was a 4 or 5.

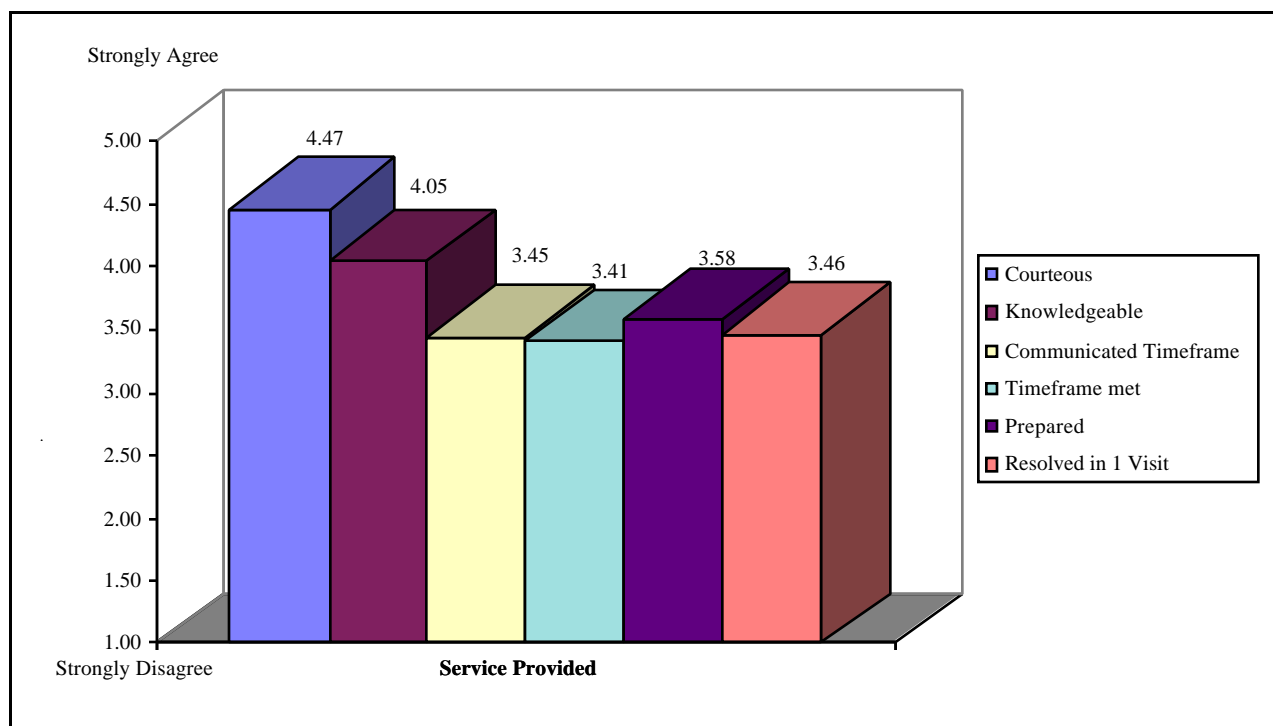


Figure 3.2.4-5: Help Desk Deskside Support

3.2.5 Special Requirements / Future Capabilities

This section of the survey collected data on current and future technology requirements. The purpose was to determine the extent to which current requirements are being met and identify others that may be emerging. The survey question consisted of two parts. The first part asked users to indicate whether they currently had access to a set of technologies/applications. These technologies included such areas as video teleconferencing, groupware, and color printing. All



told, respondents were asked to provide information on thirteen technologies/applications. The second part of the question asked users whether they needed access to a technology to better perform their job. For each part, respondents checked “Yes” if they currently have or need access, or “No” if they did not have or need access. The user could also check “Don’t Know.”

Figure 3.2.5-1 provides data for the first part of the question, whether the respondent had access to a technology. The responses ranged from a high of 596 who indicated they had access to a calendar application to a low of 67 with access to auto document routing.

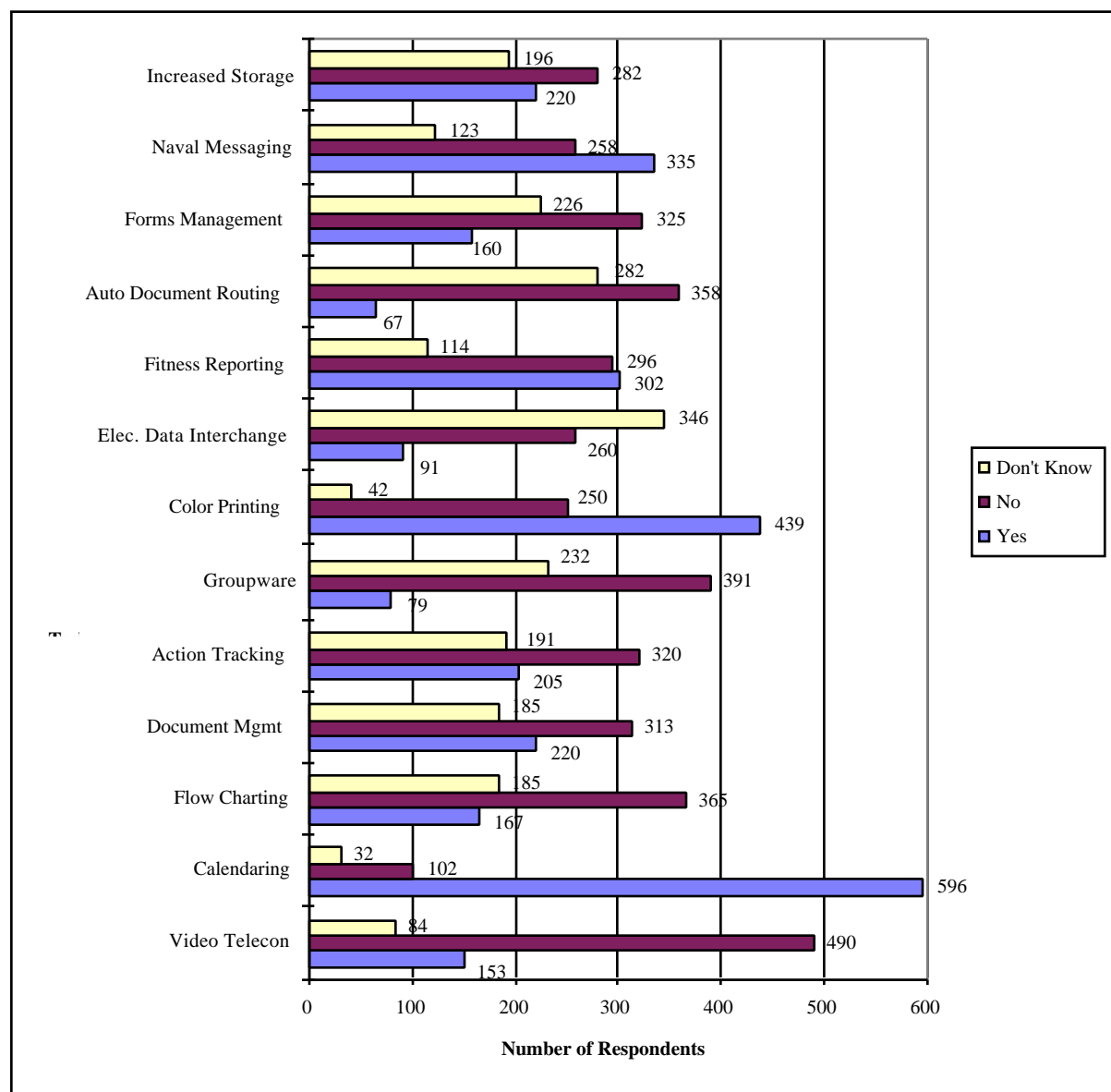




Figure 3.2.5-1: Users' Special Requirements

The data are more interesting when combined with the information from the second part of the question, whether the respondent needs access to the technology. Figure 3.2.5-2 shows the results when the number of people in the sample with access is compared to the number saying they need access. For example, of those who have access to a calendar application (596), only 426 said they need this application to perform their job better (or about 71% of those with access feel they need it). Looking at the calendaring application from the perspective of those without the software, 40 of the 102 without the software or 39% reported that they need the software to better perform their job.

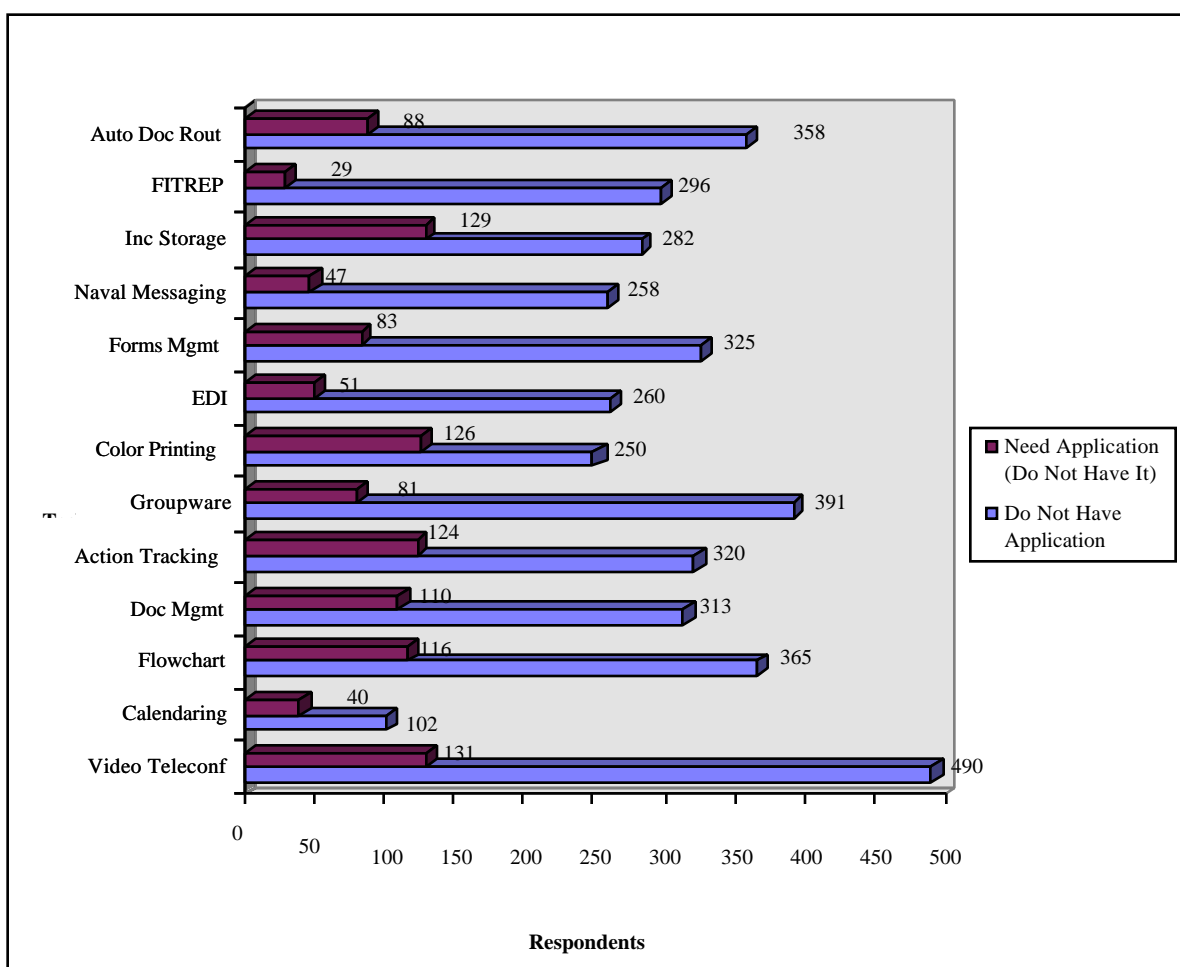


Figure 3.2.5-2: Users' Who Do Not Have Certain Technologies, But Who Need Access



The data in Table 3.2.5-1 suggest some of the problems in relying upon end-users to identify enterprise wide requirements. There are two ways to implement the decision to use new technology: first, determine the business problem which needs to be solved, re-engineer the process, then pick the technology which fits the solution; second, pick the technology which is new or appealing and hope that it solves your business problem. Of course the former method is the better way. But from the data presented in the table, it is difficult to determine whether those who have identified a need for a particular technology/application have based this need on a legitimate business purpose.

Table 3.2.5-1: Technology Access v. User Need

Technology (Tech)	# Have Tech	# Need Tech & Have It	% Need Tech & Have It	# Do Not Have Tech	# Need Tech & Do Not Have It	% Need Tech & Do Not Have It
Video Teleconferencing	153	98	64%	490	131	27%
Calendaring	596	426	71%	102	40	39%
Flowcharting	167	93	56%	365	116	32%
Documentation Management	220	180	82%	313	110	35%
Action Tracking	205	141	69%	320	124	39%
Groupware	79	58	73%	391	81	21%
Color Printing	439	359	82%	250	126	50%
Electronic Data Interchange	91	79	87%	260	51	20%
Forms Management	160	120	75%	325	83	25%
Naval Messaging	335	226	67%	258	47	18%
Increased Storage	220	166	75%	282	129	46%
Fitness Reporting	302	222	74%	296	29	10%
Auto Document Routing	67	53	79%	358	88	25%

User comments in the area of special requirements varied from the big picture, as this comment illustrates, “Make computer technology a greater priority” to a narrower, but still broadened



view “Standardized, compatible software would help...” to the specific “Visibility into a calendar scheduling tooling [sic] across organizations within DoD.” Additionally, some users were vocal about having two networks, one for classified use and one for unclassified use. Comments ran as follows: “Create a way to have the classified and unclassified systems on one LAN or PC” and “Would like to have unclass PC as primary PC - dislike the restrictions of class PC-we seldom do classified stuff anyway.”

The executives we interviewed all had a long term vision for the future of Information Technology, some of which we will highlight here, with a complete summary in Appendix D. Standardization of computer technology within DoN was an important topic for several of the executives, who felt that dealing with the standardized desktop and interconnectivity issues ranked higher than targeting special applications. One executive had an idea for a knowledge-based system which would help in the decision making process of whether or not it is cost effective to deploy a battlegroup to a troubled area. This executive also talked about more day-to-day requirements such as classified and unclassified connectivity issues, as well as connectivity with the fleet; the executive felt that more effective information communication could lead to decision-based meetings, rather than just ones which are for information dissemination. Another executive had similar thoughts about electronic information passing, and suggested that the VCNO’s morning briefing could be done electronically.

Several of the executives touched on the subject of OPNAV moving to an unclassified environment, which would mean a major culture change; however, in the mean time, taking some measures to ensure that the classified and unclassified systems were compatible in technology—“the health of the classified network is important.” Additionally, one executive mentioned setting up classified systems which could be accessed by multiple offices, which currently do not have classified capabilities. Another executive suggested using a switching system, which would allow one computer for accessing both the classified and unclassified networks. Still another executive maintained that the technology for allowing multiple level security on one computer system is “not here yet.” The debate will continue until an acceptable solution is found.

4. Recommendations

One of the primary benefits of this survey is its ability to focus attention on areas of importance to INPO and DNHN users. Using the data derived from the survey, INPO can reorder priorities where appropriate, as well as identify areas for further analysis. This latter activity can be supported by additional queries of the existing data base. It should be noted, however, that the information contained here provides only one piece of the decision making process. For example, the data suggest that users generally believe that Internet access is a very valuable tool, while dial-in access to the LAN has limited appeal. Unfortunately, it is impossible to tell if Internet access really offers a significant business benefit to the wide DNHN audience. Similarly, while it may not have widespread usefulness, dial-in access may be very valuable to a small, but important set of DNHN users (e.g., frequent travelers). The survey data base can continue to be valuable in pointing INPO in the right direction to pursue answers to these questions.

The remainder of this section provides a series of recommendations based upon the outcomes of the survey. Some of the recommendations presented here are as a direct result of the executive interviews which the EDS team conducted. Others are natural evolutionary steps resulting from the survey of DNHN users. It is recommended that INPO:

- Brief the Executive Oversight Council (EOC) and selected military and civilian executive leaders with feedback about the survey results.
- Publish the survey results using the following media: the Internet (World Wide Web)--both the DoN INPO Home Page and SIPRNET, Email (provide a brief synopsis with instructions on where to obtain additional information), an article in the DoN INPO Newsletter and hardcopy, available upon request.
- Accurately identify the DNHN customer base, in order to more easily identify users for future efforts, such as follow-up customer satisfaction surveys. Having a readily identifiable customer database would allow use of a representative sample.
- Supplement the existing data base with surveys received after the deadline.
- Conduct root cause analysis using the updated data base looking for other factors that may drive user needs or affect service levels.
- Develop processes for key areas, such as Help Desk, refresh scheduling for classified and unclassified networks, training, and on-going requirements determination for the DoN changing environment.



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- Develop a questionnaire for ongoing tracking of customer satisfaction consistent with the survey questions. Replies to the questionnaire could be tabulated monthly to track progress in DNHN customer satisfaction.
 - Follow up on support requests resulting from executive level interviews.
 - Prepare and deliver briefings to the executives who were identified by the office of the Director of the Navy Staff (DNS), N09B office. The DNS office specifically requested that an interview with the VCNO be conducted.
 - Tabulate the survey results in a baseline format (specifically in the customer satisfaction areas) so that they can be used to measure progress.
 - Use the DNHN survey, adopting the lessons learned from this first iteration, as a model for any further surveys conducted. INPO can conduct more focused surveys for *Phase One* and continue to survey its *Phase Two* users to determine their specific requirements.